

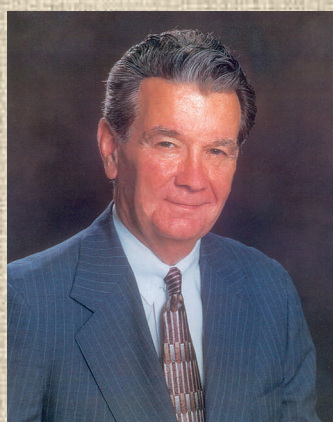


HAMPDEN COUNTY REGISTRY OF DEEDS

DAMS FILE COLLECTION

BOOK D25 – 2 (H-K)

Reports Section – Dams - Hampden County Massachusetts



*Donald E. Ashe, Register
Hampden County Registry of Deeds,
a Division of the Office of
William Francis Galvin, Secretary of the Commonwealth*

TABLE OF CONTENTS ~ REPORTS FOR HAMPDEN COUNTY

Book 2

Hampden County Dams, Letter Advising State Take Over 1970

Hampden County Dams, Reservoirs & Ponds 1970

Hampden County Dams, Tighe report 1925

Hampden County Dams, Tighe report 1926

Hampden County Dams, Tighe report 1928 Cobble Mountain Dam

Hampden County Dams, Tighe report 1928

Hampden County Dams, Tighe report 1930

Hampden County Dams, Tighe report 1932

Hampden County Dams, Tighe report 1933

Hampden County Dams, Tighe report 1934

Hampden County Dams, Tighe report 1935

Hampden County Dams, Tighe report 1936

Hampden County Dams, Tighe report 1937 Cobble Mountain Dam

Hampden County Dams, Tighe report 1937

Hampden County Dams, Tighe report 1938

Hampden County Dams, Tighe report 1939

Hampden County Dams, Tighe report 1940

Hampden County Dams, Tighe report 1940

TABLE OF CONTENTS ~ REPORTS FOR HAMPDEN COUNTY

Book 2

Hampden County Dams, Tighe report 1941	
Hampden County Dams, Tighe report 1941	
Hampden County Dams, Tighe report 1942	
Hampden County Dams, Tighe report 1943	
Hampden County Dams, Tighe report 1944	
Hampden County Dams, Tighe report 1945	
Hampden County Dams, Tighe report 1945	
Hampden County Dams, Tighe report 1946	
Hampden County Dams, Tighe report 1947	
Hampden County Dams, Tighe report 1950-1951	
Hampden County Dams, Tighe report 1955	
Hampden County Dams, Tighe report 1955(1)	
Hampden County Dams, Tighe report 1955(2)	
Hampden County Dams, Tighe report 1956	
Hampden County Dams, Tighe report 1961	
Hampden County Dams, Tighe report 1966	
Hampden County Dams, Tighe report 1967	
Hampden County Dams, Tighe report 1970 (Approx)	
Hampden County Sportsmen's Clubs, Access to Ponds	
Hampden Dam Inspections 1957-1969	
Holland—Hamilton Reservoir Petition 1956	
Holland Dam Inspections 1956-1970	
Holyoke Waterworks Deeds	
Holyoke Dam Inspections 1956-1969	

Hampden County Dams - 1970 Letter advising State take over



1970 Reports

Hampden County Dams Letter by George H. McDonnell, County Hydraulic Engineer, of Tighe & Bond dated September 8, 1970. Advises the Hampden County Commissioners that under the provisions of Chapter 595 of the Acts of 1970, the Massachusetts Division of Waterways will assume the construction and maintenance responsibility of County Dams on October 18, 1970.

Dam	Hampden County Dams
Name	Massachusetts Comm Waterways

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

**TIGHE
& BOND**

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEOUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

September 8, 1970.

*The Water Dept is
Assume Construction
since Dept of Pub. Works
Div of Waterways
100 Washburn St
Boston*

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Re: Responsibility for Dams

I have received a communication from John T. Hannon, Deputy Chief Engineer of the Division of Waterways of the Mass. Dept. of Public Works informing me that under the provisions of Chapter 595 of the Acts of 1970, the Division of Waterways will assume the construction and maintenance responsibility for County dams on October 18, 1970.

The undersigned will continue inspecting dams, confer on construction and repairs with owners, etc., thru Saturday, October 17th.

Very truly yours,

George H. McDonnell
George H. McDonnell
County Hydraulic Engineer

GHM/amd

Hampden County Large Ponds, Reservoirs & Dams (1970 estimate)



1970 Reports

A listing of Large Dams of uncertain date (believed to have been compiled before the state take over in 1970.) In total there are 319 dams of various sizes in Hampden County at this time. Only Dams of substantial size are listed [here](#).

City/Town	Wales (17 dams - 1 large dam)
City/Town	Ludlow (16 dams - 5 large dams)
City/Town	Wilbraham (8 small dams)
City/Town	Westfield (2 large dams)
City/Town	Springfield (17 dams - 1 large dam)
City/Town	Blandford (10 dams - 2 large dams)
City/Town	Tolland (10 dams - 2 large dams)
City/Town	Agawam (13 small dams)
City/Town	Southwick (16 dams - 1 large dam)
City/Town	Russell (8 dams - 2 large dams)
City/Town	Holyoke (17 dams - 5 large dams)
City/Town	Hampden (4 small dams)
City/Town	Longmeadow (2 small dams)
City/Town	Monson (38 dams - 4 large dams)
City/Town	Brimfield (12 dams - 1 large dam)
City/Town	Granville (19 dams - 2 large dams)
City/Town	Holland (1 large dam)
City/Town	West Springfield (11 dams - 2 large dams)

City/Town	Chicopee (26 dams - 3 large dams)
City/Town	Palmer (22 dams - 4 large dams)
City/Town	Montgomery (1 large dam)
City/Town	East Longmeadow (4 small dams)
Dam	Long Pond Dam
Dam	Borden Brook Dam
Dam	Hampden County
Dam	Chicopee River Dam
Dam	Collins Dam
Dam	Ludlow Dam
Dam	Red Bridge Dam
Dam	Lake Bray Dam
Dam	Holyoke Water Power Company Dam
Dam	Hamilton Reservoir Dam
Dam	Granville Reservoir Dam
Dam	Springfield Water Works Dam
Dam	Indian Orchard Dam (Western Massachusetts Electric Company Dam)
Dam	Whiting Street Reservoir Dam
Dam	Ashley Reservoir Dam
Dam	Noyes Pond Dam
Dam	Chicopee Water Works Dam
Dam	Ellis Dam

Dam	Pulpit Rock Pond Dams
Dam	Monson Water Works Dam
Dam	Westfield City Water Dam
Dam	Thompson Lake Dam
Dam	Forest Lake Dam
Dam	New England Power Company Dam
Dam	Bondsville Realty Company Dam
Dam	Russell Pond Dam
Dam	Cobble Mountain Dam
Dam	Waterhops Pond Dam - U S Armory Dam
Dam	Trout Pond Dam
Dam	Lake George Dam
Dam	Foster Machine Company Dam
Dam	Stevens Paper Mills Dams
Dam	Strathmore Paper Company Dam
Dam	Bear Hole Dam
Dam	McLean Reservoir Dam
Dam	Congamond Lakes Dam
Dam	Little Alum Pond Dam
Dam	Cooley Estate Dam
Dam	Dwight Dam
Dam	Church Manufacturing Company Dam

The following is a list of dams forming large ponds, located within the limits of Hampden County, in the Commonwealth of Massachusetts. Some of the dams are situated on streams that form the County boundary. Though a portion of a dam may be in an adjacent County, reference is made to the dam on the attached list, if it forms a pond of considerable size.

In all, there are 319 dams and dam sites situated in Hampden County, forming small, medium and large ponds and reservoirs. In the majority of the cases, the volume of water in storage is not an important factor from a power development or natural resource viewpoint. Consequently, nearly 300 of the dams situated in Hampden County are not included on the attached list, since they form only small mill, recreational or farm ponds.

LIST OF LARGE PONDS, RESERVOIRS AND DAMS
IN
HAMPDEN COUNTY

AGAWAM

There are 13 dams and dam sites in Agawam but none are of a large enough size to be considered in this listing.

BLANDFORD

There are 10 dams and dam sites in Blandford. Two dams are large enough for consideration.

A. Borden Brook Dam

This dam forms Borden Brook Reservoir of the Springfield Water Works system. It is located on the Blandford-Granville town line at a point where the drainage area contributory to the dam is about 8 square miles. The dam is an earthen embankment about 700 ft. in length, 75 ft. in height and 24 ft. in width on its top. The dam was completed in 1909 and forms a Reservoir covering about 230 acres with a capacity of about 2,500 millions of gallons.

B. Long Pond Dam

Long Pond Dam forms a pond with a drainage area of about three quarters of a square mile. The dam is an earthen embankment faced downstream with stone masonry and paved upstream with cobblestone. It is 250 ft. in length and about 6.5 ft. in height. Long Pond is a natural pond raised by the dam which was built across the natural outlet in about 1898. The surface area of the pond is approximately 58 acres, and the estimated quantity of water in storage is 100 million gallons. The owner of this pond and reservoir is Peck Lumber Co. of Westfield, Mass. The pond is now used as a water supply for the Town of Blandford, Mass.

BRIMFIELD

There are 12 dams and dam sites in Brimfield. One is large enough for consideration.

A. Little Alum Pond

This pond is located about 1.5 miles north of East Brimfield. The pond has a surface area of about 60 acres and a drainage area of three quarters of a square mile. The dam is an earth embankment about 100 ft. in length and

there was a grist mill in connection with this pond. At present, the pond is used for a summer colony and recreational purposes. It has an estimated capacity of about 125 million gallons. The dam is apparently owned by Little Alum Lake Association, Brimfield, Mass.

CHESTER

There are seven dams and dam sites in Chester but none are of a large enough size to be considered in this listing.

CHICOPEE

There are 26 dams and dam sites in Chicopee. Three are large enough for consideration.

A. Chicopee River Dam - Chicopee Falls

This dam is owned by the City of Chicopee and is located across the Chicopee River in the center of Chicopee Falls. The dam forms a shallow pond in Chicopee River and at one time a power development was connected with the dam. The dam is in very good condition. The old canal has been filled in and the head gates blocked. At the present time, no particular use is being made of this dam. Further information regarding the structure can be obtained from the City of Chicopee.

B. Chicopee Water Works Upper Dam - (Cooley Brook Reservoir)

The dam is on Cooley Brook in the easterly section of Chicopee, not too far distant from Westover Field. The dam forms a reservoir about thirty acres in area and with a capacity of 135 million gallons. The drainage area contributory is about 4 square miles.

The dam is an earthen embankment containing a heavily reinforced concrete corewall of the flexible type. A steel sheet piling cutoff wall is rigidly connected to the base of the corewall and extends from 30' to 35' into the natural ground under the dam. The length of the dam along its top is 550 ft. and its maximum height is 46 ft.

At one time, the reservoir formed by this dam was used to supply the City of Chicopee with water. Now the body of water is not used for any particular purpose. Recreational use has been proposed.

C. Dwight Dam

This dam is on the Chicopee River in Chicopee Center. It is a stone masonry

the KW development.

EAST LONGMEADOW

There are 4 dams and dam sites in East Longmeadow but none are of a large enough size to be considered in this listing.

GRANVILLE

There are 19 dams in Granville. Two dams are large enough for consideration.

A. Cooley Estate Dam

The dam is on a tributary of Dickinson Brook at a point about one half mile downstream from Granville Corners. The drainage area is about one square mile. The dam is an earthen embankment 150 ft. in length, 8 ft. in width and carries a roadway on its top. The pond formed is a large body of water covering about 100 acres. There is no information regarding the capacity of this body of water but it is thought to be at least 150 million gallons to 200 million gallons. The dam and body of water are privately owned by a Mr. Herbert Hiers of Granville, Mass. The body of water formed is also known as Pine Lake. The lake is used for recreational purposes.

B. Granville Reservoir Dam

This dam is owned by the City of Westfield and forms a reservoir for water supply purposes. It is located on Tillotson Brook at a point where the drainage area contributory is about 5-3/4 square miles. The dam is an earthen embankment containing a concrete cutoff wall. It is 840 ft. in length, about 90 ft. in height above the natural stream bed and has a top width of 24 ft. The upstream side of the dam has a slope of 1 on 3, while the downstream side has an average slope of 1 on 2-1/4. The capacity of the reservoir is about 630 million gallons.

HAMPDEN

There are 14 dams and dam sites in Hampden but none are of a large enough size to be considered in this listing.

HOLLAND

area contributory is estimated at 21-3/4 square miles. The dam was washed out in the flood of August, 1955, and a new and larger concrete spillway structure has recently been completed. The dam forms a storage reservoir that has been used for providing water for industrial purposes at woolen mills downstream. No power was developed at the dam. The body of water formed is about 450 acres in size and the estimated quantity of water in storage is about 850 million gallons. There never has been a definite figure in the file as to the capacity of this reservoir. The reservoir is used for recreational purposes and is the center of a large summer colony. The dam is owned by the Town of Holland.

HOLYOKE

There are 17 dam and dam sites in Holyoke. Five dams are large enough for consideration.

A. Holyoke Water Power Co. Dam

This dam is situated on the Connecticut River and has been reported in the report of dams in Hampshire County.

B. McLean Reservoir Dam

This dam forms a reservoir of about 350 million gallons capacity and is used for water supply purposes in the City of Holyoke, Mass. The dam is located off of Route 202. It is an earthen embankment 735 ft. in length, about 33 ft. in height and 25 ft. wide at its top. The dam is owned by the Holyoke Water Works.

C. Ashley Reservoir Dam

This is a dam located just below McLean Reservoir hereinbefore described. It is used for water supply purposes and is owned by the Holyoke Water Works. The pond formed by the dam is approximately 286 acres in area. The drainage area is about 3 square miles and the total capacity of the reservoir is 1,500 million gallons. This was originally a natural pond that was raised due to construction of a small dam at its southern end. The dam is an earthen embankment 250 ft. in length and about 9 ft. in height.

D. Whiting Street Reservoir Dam

This is another water supply reservoir of the Holyoke Water Works system. It is located near the foot of Mt. Tom and westerly of Highway Route 5. The dam is constructed of rough masonry of heavy section, being about 22 ft. in height and over 15 ft. in width at its base. The dam is 1,773 ft. in length and is faced downstream with a sizeable earth embankment. The reservoir formed has a surface area of approximately 120 acres and the capacity of the reservoir when full to spillway level is about 500 million gallons. The drainage area of the Reservoir is about 1.5 square miles.

E. Lake Bray Dam

This is a small earthen dam forming Lake Bray on the Mt. Tom Reservation. This Reservation is operated jointly by Hampden and Hampshire counties. The Lake is used for recreational and aesthetic purposes. The drainage area is about 1.5 square miles. The dam is an earth embankment carrying the entrance highway to the Reservation. It is 460 ft. in length and about 9 ft. in height. No definite figures are available in connection with the capacity of this body of water. The Lake is quite shallow and probably does not store more than 65 million gallons.

LONGMEADOW

There are 2 dams and dam sites in Longmeadow but neither one is large enough in size to be considered in this listing.

LUDLOW

There are 16 dams and dam sites in Ludlow. Five dams are large enough for consideration.

A. Red Bridge Dam

This dam is on the Chicopee River just downstream a short distance from the westerly Palmer Town line. The dam was built in 1901, has a maximum height of 58 ft. to the top of the earth embankment portion, and a total length of about 625 ft. About one-half the length of this structure is the earth embankment. It has a concrete core wall. The embankment is paved with granite blocks on the upstream slope. The spillway is of Ogee type. It is 306 ft. in length, with its crest about 10 ft. below the top of the embankment.

The pond formed extends to within a half mile of the center of the Village of Three Rivers in Palmer. It covers an area of about 170 acres and has a reported storage capacity of about 1,200 millions of gallons. A hydro-electric plant is situated on the left side of the river just downstream of the dam. The dam and power installation are presently owned by the Western Mass. Electric Co. at 73 State Street, Springfield, Mass.

B. Collins Dam

This dam is located on the Chicopee River downstream of the dam described above and is presently owned by the Alchar-Wilbraham Corp. It was formerly the dam of the Collins Paper Co. The dam is located near the center of No. Wilbraham and upstream from the mill building. The dam is a masonry faced spillway structure for the full width of the river. The spillway is about 250 ft. in length and the dam is about 20 ft. in height. The pond formed covers about 80 acres. No capacity of the pond is given in the records.

However, much of the old pond basin is silted and it is doubtful if the total storage capacity upstream of the dam exceeds 130 million gallons. The pond behind the dam has been used as a source of power and for process water as well as fire protection at the industry. It is doubtful if it is used at present since the industrial plant has been inactive for some time.

C. Ludlow Dam

This dam is located on the Chicopee River at the Town of Ludlow Business Area near the bridge connecting the central portion of Ludlow with Indian Orchard. It is a masonry concrete spillway structure of the Ogee type. It is about 200 ft. in length between abutments and about 20 feet in height above the stream bed. The dam forms a pond of about 72 acres in area. There is nothing in the records that indicates the volume of the pond behind the dam. In all possibility, the volume is not much more than 100 million gallons. The dam is used for power purposes. According to the records, it is owned by the Western Mass. Electric Co.

D. Indian Orchard Dam

This dam is located downstream of the dam above-described on the Chicopee River between Ludlow and the Indian Orchard Section of Springfield. It is just upstream from the West Street Bridge connecting Ludlow with Indian Orchard. The dam is a stone masonry structure built on a ledge foundation approximately 400 ft. in length and 29 ft. in height. The dam is owned by the Western Mass. Electric Co. and is used for the generation of electric power. The pond area is considerably greater than that of the previously described dam but there is no record as to the exact area or volume of the pond proper. More detailed information in connection with these power dams on the Chicopee River could be obtained from the Office of the Western Mass. Electric Co. No doubt much information is available in U.S. Engineer files in connection with these installations. In connection therewith we point to the report entitled "Interim Report on Review of Survey, Chicopee River Basin, Massachusetts" dated 8 Sept., 1959, particularly Page 42, Paragraph c. In this Paragraph, we quote, "The Western Mass. Electric Co. has four plants on the Chicopee River with a total installed capacity of 13,780 KW. The central Mass. Electric Co. has a 375 KW installed capacity plant on the Quaboag River, and the New England Power Co. has a plant on the Chicopee River with an installed capacity of 3,200 KW."

E. Springfield Water Works Dam

This structure is located in the northeasterly portion of the Town of Ludlow. The dam forms a reservoir of the Springfield Water Works system and the reservoir is used for water supply purposes. The reservoir has a surface area of 448 acres with a total drainage area contributory, including Jabish Brook, of 21 square miles. The dam is an earthen embankment 1,300 ft. more or less in length and about 40 ft. in height with its overflow on the

MONSON

There are 38 dams and dam sites in Monson. Four dams are large enough for consideration.

A. Church Manufacturing Co. Dam

This dam is situated on Chicopee Brook northerly of the built-up portion of Monson. The drainage area at the dam is about 21 square miles. The dam is a masonry structure backed with earth. It is 82 feet in length and about 10 ft. in height. Water stored by the dam is used for process purposes and it is possible some power is generated. The pond is shallow and stores a negligible quantity of water. The dam and pond are owned by the Church Manufacturing Co., Monson, Mass.

B. A. B. Ellis Co. Dam

Upstream where the drainage area is about 13-1/2 square miles is a dam belonging to the A. B. Ellis Mills, Inc., of Monson, Mass. It is a stone masonry spillway structure backed with earth about 80 feet in length and about 16 ft. in height. Water is used for process purposes and for some power generation. The pond formed behind the dam is negligible in size. It is very shallow and much of the volume has been silted in.

C. Monson Water Works Dam

This dam is on Conant Brook at a point adjacent to the main highway where the drainage area contributory is 7-1/2 square miles. It is an earth embankment faced with masonry. The spillway is located in the middle of the structure, is about 48 ft. long and has a concrete crest. The pond formed is about 2 acres in area and stores approximately 20 million gallons of water. The dam and reservoir are owned by the Monson Water Department and water is used for water supply purposes.

D. Pulpit Rock Pond Dams

Pulpit Rock Lake is located in the northwesterly portion of Monson. It is a privately owned body of water that has recently been the center of a housing development project. Two dams form the Lake. One dam is an earthen structure about 195 ft. in length and 15 feet in height. It has a masonry spillway at its easterly end. The other dam was built following the flood of August, 1955 to replace a destroyed structure. It is a concrete masonry structure of the Ogee section. The Lake formed is approximately 24 acres in area. The pond is relatively shallow and is doubtful if the entire volume of the pond exceeds about 40 million gallons. The property is in the hands of an estate. Address: Third National Bank & Trust Co., Springfield 2, Mass.

MONTGOMERY

A. Westfield Water Dept. Dam

This dam is used to form a storage reservoir for water supply purposes. The drainage area is approximately two square miles. The reservoir formed by the dam is about 38 acres in area and has a storage capacity of about 120 million gallons. The dam is an earth embankment about 360 ft. in length and 30 ft. in height. The spillway is a relatively long masonry chute-type structure passing thru the dam at its easterly end. The dam and reservoir are owned by the City of Westfield.

PALMER

There are 22 dams and dam sites in Palmer. Four dams are large enough for consideration.

A. Lake Thompson Dam

This dam forms Lake Thompson and is owned by the Lake Thompson Civic Association, Inc. The body of water is used for recreational purposes and around the shore of the Lake, there has been a summer colony development. This has now grown to a year-round type of housing development. The dam is an earthen embankment, faced upstream with a concrete wall about one foot in thickness and downstream with a dry stone masonry wall. The length of the dam is about 82 ft. and the height 11 ft. The pond covers 40 or more acres and at one time operated a saw mill. The depth of the pond is not too great and it is possible that the storage volume is only about 60 millions of gallons.

B. Forest Lake Dam

This is a small stone masonry spillway type structure backed with earth 35 ft. in length and about 6 ft. in height. Its east end abuts the Ware River branch of the Boston & Albany Railroad and its west end abuts the local highway. Forest Lake is used for recreational purposes and covers an area of about 62 acres. It is doubtful that the total volume of the pond exceeds 100 millions of gallons. No records are on hand that would indicate the pond volume. It is apparently owned at the present by Mr. Don Holbrook of Palmer, Mass.

C. New England Power Co. Dam

This was formerly the Otis Co. dam and is located on the Chicopee River just downstream from Three Rivers. It is a concrete masonry structure of the Ogee type about 200 ft. in length and 30 ft. in height. The pond formed by the dam covers about 60 acres and the water power operates a hydro-electric plant at the dam. This plant is marginal in its operation and there is evidence that it may be abandoned in the not too distant future. Detailed information regarding this structure is available in the Interim Report on Review of Survey, Chicopee River Basin, Massachusetts, dated 8 Sept., 1959.

D. Bondsville Realty Co. Dam

This dam is in the Bondsville Section of Palmer and has been reported in the listing of dams in Hampshire County. The dam is partly in Hampden County and partly in Hampshire County.

There are other small mill dams in Palmer that do not develop a great deal of power and have very small storage reservoirs. If further information is desired in connection with these, this information can be provided. No doubt much of the information in connection with other facilities on the branches of the Chicopee River is available in U. S. Engineer files.

RUSSELL

There are 8 dams and dam sites in Russell. Two are large enough for consideration.

A. Cobble Mountain Dam

This dam forms Cobble Mountain Reservoir of the Springfield, Mass. Water Works system. It is the main source of water supply for the City of Springfield and for a number of Towns surrounding Springfield. The dam is located in the southwesterly corner of the Town of Russell where the drainage area contributory is about 46 square miles. The dam is an earthen structure built by the hydraulic and semi-hydraulic methods on a solid ledge foundation. It is 750 ft. in length along its top and 243 ft. in height above the river bed. At crest elevation the reservoir formed covers a surface area of about 1,030 acres with a capacity of approximately 20 billions of gallons. Though the dam is in the Town of Russell, the Reservoir lies almost entirely within the Town of Blandford. Power is developed in a power station situated downstream from the dam. This power station operates only during peak load and certain base conditions. It has an installed capacity of 36,000 KW. It is owned by the Western Mass. Electric Co. and the Springfield Water Works. It usually operates only from 3 hours to 8 hours a day. Some days, not at all.

B. Russell Pond Dam

This is a structure owned by the Strathmore Paper Co. Mills. It forms a pond approximately 70 acres in area, used for recreational purposes. The drainage area above the dam is about one and one half square miles. No definite figures are available as to the volume of the pond but in all probability it exceeds 120 million gallons. The dam forming the pond is an earth embankment 135 ft. in length and about 8 ft. in height. The pond is apparently a natural body of water that has been raised by the construction of the dam.

C. There are three power and process water installations on the Westfield River situated in the Town of Russell. These are the two dams owned by the Strathmore Paper Co. in the Woronoco Section of Russell, the dam of the Westfield

stallations forms a pond of any consequence. The water stored is used for process purposes and some power is generated. If more detailed information is desired, this information can be obtained on request. It is probable that detailed information is already in the U. S. Engineers files on the Westfield River installations.

SOUTHWICK

There are 16 dams and dam sites in Southwick. Only Congamond Lakes are large enough for consideration.

- A. The main body of water in Southwick is composed of Congamond Lakes. The Lakes are formed by a north dike, not too far southerly of Route 57 in Southwick, and by the south dike adjacent to the Connecticut State Line. The outlet from Congamond Lakes is a culvert-like structure thru and under Berkshire Street near the central portion of the Town of Southwick. Congamond Lakes are interconnected natural bodies of water that have been raised in height by the construction of the dikes and the outlet facility. The natural bodies of water were almost as large as at present. The drainage area is reported about 4 square miles and the surface area of the ponds are about 580 acres. There is nothing in the records that indicates the volume of water in storage. The ponds have fairly good depth in certain sections and it is roughly estimated that the total amount of water is in excess of one billion gallons.

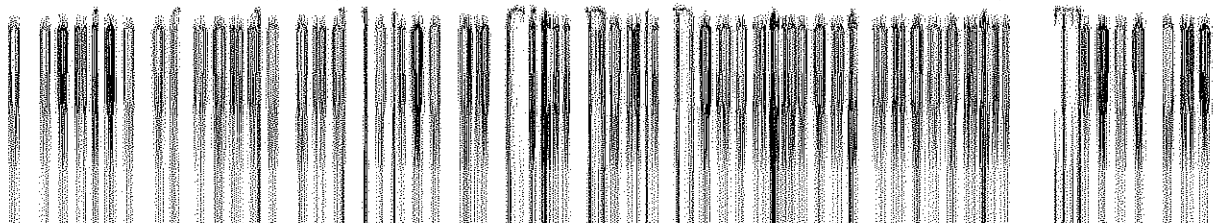
SPRINGFIELD

There are 17 dams and dam sites in the City of Springfield. Only one is of sufficient size for consideration.

A. U. S. Government Dam, Watershops

This dam is at the U. S. Armory, Watershop Division, and it forms Watershops Pond having a surface area of about 328 acres. The drainage area is about 23-1/2 square miles. Being a Federal structure, there is no general information regarding this dam in County records other than the fact that the dam is about 106 ft. in length between abutments and 27 feet in height. No doubt detailed information is available in U. S. Engineers files.

There are three very small mill dams on Mill River in Springfield as well as



a series of ponds and lakes on City Park Department property. These are located primarily in Forest Park and in Van Horn Park. Since they are City-owned and are not too large in size, no information is presented herein.

TOLLAND

There are ten dams and dam sites in Tolland. Two are large enough for consideration.

A. Noyes Pond Dam

Noyes Pond Dam is situated about two miles northwest of Tolland Center. It is a natural body of water raised by a dam built across its outlet. The drainage area contributory to the pond is about 1-1/2 square miles and the area of the pond is about 180 acres. There is no definite information as to the volume of the pond. It probably is in the neighborhood of 250 million gallons or more. The dam across the outlet is a dry stone masonry structure capped with concrete and contains some earth fill. It is about 200 ft. in length and about 7 ft. high at its highest point. Formerly the pond was used as a storage and feeder for a small sawmill pond located downstream. In recent years, the pond has been used for recreational purposes. The dam is owned and controlled by the Tunxis Club of Tolland, Mass.

B. Trout Pond Dam

This is a very shallow pond downstream of Noyes Pond and is also owned by the Tunxis Club. The drainage area contributory to the pond is roughly 3-1/4 square miles. The dam forming the pond is built of earth and field stone masonry faced on the upstream side with perpendicular planking. The dam is about 170 ft. in length and 8 ft. in height. The pond is extremely shallow, covers about 30 acres and is used primarily for fishing. The capacity of the pond is probably not in excess of 50 millions of gallons.

WALES

There are 17 dams and dam sites in Wales. Only one is large enough for consideration.

A. Lake George Dam

Lake George is a natural body of water raised by a dam. The dam itself is apparently under the supervision of local Town authorities for it forms the foundation and embankment for carrying the main highway in this portion of Town. The pond formed is used for recreational purposes. It covers about 77 acres and has a drainage area contributory of about one and one half square miles. Nothing in the records definitely indicates the capacity of the Lake. However, it is probably in excess of 150 million gallons.

- B. There are a number of small private dams and ponds on property of the Tupper Wildlife Sanctuary. This is a privately owned development, covering a considerable area of Wales, used for the propagation of wild life. The many ponds and small lakes promote propagation of water fowl as well as fish. All of the property is owned by Mr. Norcross of the Norcross Greeting Card Co., New York City.

A. Foster Machine Co. Dam

This is a small dam located on Little River near the center of Westfield. The dam is a timber crib structure backed with gravel. It is 297 ft. in length between abutments and slightly less than 6 ft. in total height above the mud sill. There is hardly any water stored behind the dam because of the deposition of sands and gravel brought down the river by flood flows. The water in storage is used only for fire and processing purposes. The dam is owned by the Foster Machine Co. of Westfield, Mass.

B. Stevens Paper Mills Dams

There are two dams upstream of the Foster Machine Co. dam that are owned and operated by the Stevens Paper Mills, Inc. of Westfield, Mass. The lower of the two dams is a spillway structure that was improved, strengthened and had the crest lowered following the flood of August, 1955. This is a masonry dam. The pond formed by the dam covers about 36 acres. Much of the pond volume has been filled in and the quantity of water in storage is not great. Most of the water is used for fire protection and process purposes.

The upper dam located about a mile upstream on Little River at a point where the drainage area contributory is 78 square miles is a stone masonry spillway structure built of hard red sandstone on a ledge foundation. The dam is located in the full width of the river and is approximately 150 ft. in length. The crest of the spillway is about 6-1/2 ft. below the top of the abutments and the dam itself is about 14 ft. in height. The pond formed is long and narrow and has very little storage. Water stored is used in part for a small amount of power development and for process water.

WEST SPRINGFIELD

There are 11 dams and dam sites in West Springfield. Two dams are large enough for consideration.

A. Strathmore Paper Co. Dam

This dam is located on Westfield River in Mittineague about one half mile upstream from the Mittineague Section of West Springfield. It is a timber crib spillway structure laid on ledge about 450 ft. in length between abutments and 18-1/2 ft. in height. It forms a pond of about 20 acres. The pond does not have a great deal of depth because of sands and gravels having been washed down and deposited in the pond as the result of flood flows. The dam is kept in a good state of repair and is used for a small amount of power development (450 KW) at the Strathmore Paper Co. mill just downstream of the dam.

B. Bear Hole Dam

hood of 80 million gallons of water depending upon pond level. Immediately downstream of the dam is the filter plant where the water is processed and then pumped to the West Springfield Water Works system.

WILBRAHAM

There are 8 dams and dam sites in Wilbraham but none are large enough for consideration in this listing.

GENERAL

In all, there are 319 dams of various sizes in Hampden County. Herein is given a brief description of those that are classed as the large dams. If further detailed and complete information is desired in connection with any of these listed dams, this information could be obtained either thru the owner or will be furnished by the Office of the County Commissioners upon request.

Hampden County Dams 1925 Tighe Report



1925 Reports

The number of dams inspected is 295 with an additional 16 listed in appendices for a total of 311 - by James L. Tighe - December 29, 1955. This is the first compilation of Dams in Hampden County. The index contains the cities or towns, a separate section for the seven (7) dams on the Westfield River (on page 77), ponds or lakes when paragraph is dedicated, and the names of the dams only. The following Tighe Reports are not indexed in full unless they contain specific reports as to historic flooding and important public works projects. The final report in 1970 is also indexed.

City/Town	Palmer
-----------	--------

City/Town	Wilbraham
-----------	-----------

City/Town	West Springfield
-----------	------------------

City/Town	Agawam
-----------	--------

City/Town	Westfield
-----------	-----------

City/Town	Wales
-----------	-------

City/Town	Tolland
-----------	---------

City/Town	Springfield
-----------	-------------

City/Town	Southwick
-----------	-----------

City/Town	Russell
-----------	---------

City/Town	Longmeadow
-----------	------------

City/Town	East Longmeadow
-----------	-----------------

City/Town	Montgomery
-----------	------------

City/Town	Ludlow
-----------	--------

City/Town	Holland
-----------	---------

City/Town	Granville
-----------	-----------

City/Town	Chicopee River
-----------	----------------

City/Town	Chester
City/Town	Blandford
City/Town	Monson
City/Town	Black Pond
City/Town	Chicopee
City/Town	Holyoke
City/Town	Brimfield
City/Town	Hampden
Dam	Clark, George, Dam
Dam	Giamari, Antonio, Dam
Dam	Mill Pond Dam, aka Barney & Berry Skate Co Dam, aka Stephens, J, Arms Co Dam No. 1
Dam	Pratt, George D, Dam
Dam	Squire, J M, Dam
Dam	Chicopee City Water Works Dam aka Abbe Brook Reservoir Dam
Dam	Springfield Waste Co Dam
Dam	Palmenberg, E T, Dam No. 2
Dam	Hogan, Peter, Dam
Dam	Cooley, William, Dam
Dam	Tunxis H F O Club Dam
Dam	Thompson, Leon H. Dam
Dam	Marcy, H P, & Co Dam
Dam	Wales Woolen Mill Dam

Dam	Maple Valley Woolen Mill Dam
Dam	Palmenberg, E T, Dam No. 1
Dam	Peeble Dam, aka Springfield City Water Works Dam
Dam	Phelon, Curtis, Dam
Dam	Bates Tannery Dam, aka Springfield City Water Works Dam
Dam	Borden Brook Reservoir Dam, aka Springfield City Water Works Dam
Dam	Rising, W D, Dam
Dam	Hart, L F, Dam
Dam	Agawam Company Dam No. 2
Dam	Springfield City Park System Dams
Dam	Agawam Sportsman's Club Dam
Dam	Deeming, Frank B, Dam No. 2
Dam	Lombard Reservoir Dam aka Springfield City Water Works Dam
Dam	Springfield Webbing Co Dam
Dam	Verchot, Julius A, Dam
Dam	Fitzgerald, Edward, Dam No. 2
Dam	Fitzgerald, Edward, Dam No. 1
Dam	Deeming, Frank B, Dam No. 1
Dam	Needham, Ernest L, Dam
Dam	Agawam Company Dam No. 1
Dam	American Writing Paper Co Dam No. 2
Dam	Dell Manufacturing Co Dam

Dam	Bemis & Call Hardware Co Dam
Dam	Bay State Thread Works Dam
Dam	Duckworth Chain Manufacturing Co Dam
Dam	Battistoni, Joseph, Dam
Dam	Ash, John H, (Est) Dam
Dam	Peck, Willy M, Dam
Dam	American Writing Paper Co Dam No. 1
Dam	U S Armory Water Shop Dam
Dam	Westfield River Realty Trust Dam
Dam	Strathmore Paper Co Dam - Woronoco
Dam	Westfield River Paper Co Dam
Dam	Chapin & Gould Paper Co Dam
Dam	Spectacle Pond
Dam	Nine Mile Pond
Dam	Gates, Leroy H, Dam No. 1
Dam	Ramapogue Ice Co Dam
Dam	Fletcher, W F, Dam No. 1
Dam	Waite, F M & B H, Dam, aka Springfield City Water Works Dam
Dam	Dennis Mahoney Dam
Dam	Garigue, W A, Dam
Dam	Springfield City Water Works Intake Dam
Dam	Strathmore Paper Co Dam - Potash Brook

Dam	Hazzard Pond Dam
Dam	Richards, Fred J, Dam
Dam	Congamond Lakes Dams
Dam	Shaw Manufacturing Co Dam
Dam	Buzoki, Peter, Dam
Dam	Ely, Henry W, Dam
Dam	Smith & Hastings Dam
Dam	Bemis, Robert & Edward, Dam
Dam	Rood, Charles D, Dam
Dam	Farnum, B W, Dam
Dam	Lambson, Roy K, Dam
Dam	Russell Town Water Works Dam
Dam	Ludlow Manufacturing Associates Dam No. 1
Dam	Abrasive Mining & Manufacturing Co Dam
Dam	Langwald Dam
Dam	Holyoke Ice Company Dam
Dam	Mt Tom Brewery Dam
Dam	Chicopee City Water Works Dams
Dam	Hamilton Bleachery Dam
Dam	Courtney, Dana S, Company Dam
Dam	Lawrence Fortier Dam
Dam	Ames Sword Company Dam

Dam	Goetz, M A, Dam
Dam	Isaacs, F F, Dam
Dam	Humpage, F R, Dam
Dam	Kaplinger, Charles H, Dam
Dam	Farrer, L D, Dam
Dam	Alderman, Ernest L, Dam
Dam	Karr Dam
Dam	Desmarais, F X, Dam
Dam	Holcomb, A R, Dam No. 1
Dam	Chester Electric Lighting Co Dam
Dam	Johnson & Johnson Dam No. 1
Dam	Chicopee City Water Works Dam
Dam	Degano, John, Dam
Dam	Hodge, Julia, Dam
Dam	Roberts, Ralph, Dam
Dam	Chicopee River Dams
Dam	Cooley, R B, Dam
Dam	Morgan, E H, Dam No. 2
Dam	Dickinson, Howard, Dam
Dam	Westfield City Water Works Dam
Dam	Pecowsic Brook Dam
Dam	Indian Orchard Co Dam

Dam	Bircham Bend Power Co Dam
Dam	Lamieux Brothers Dam
Dam	Dwight Manufacturing Co Dam
Dam	Noble & Cooley Drum Shop Dams
Dam	Lincoln, E K, Dam
Dam	Pierce, A F, Dam
Dam	Cheney, W B, Dam
Dam	Pelletier, J N, Dam
Dam	Snell Manufacturing Co Dam
Dam	Cochran Pond Dam
Dam	Cowles, Emma K, Dam
Dam	Nelson & Rice Tannery Dam
Dam	Dunlap, Frank H, Dam
Dam	Kenworthy, John, Dam
Dam	Gibbs, Albert, Dam
Dam	Lee, Arthur, Dam
Dam	Blair Pond Dam
Dam	Whitman, L L, Dam
Dam	Blair, Hiram L (Est), Dam
Dam	Duprey, William, Dam
Dam	Otis Co Dam
Dam	Peeble, Sylvester, Dam

Dam	Gates, Leroy H, Dam No. 2
Dam	Morgan, E H, Dam No. 1
Dam	Hamilton Emery & Corundum Co Dam
Dam	Wyszatycki, John, Dam No. 2
Dam	Battista Bonomi Dam
Dam	Oxford Golf Club Dam No. 2
Dam	Harvey Porter Dam
Dam	Brown, Charles A, Dam
Dam	Oxford Golf Club Dam No. 1
Dam	Perkins, J E, Dam
Dam	Jackson Mills Emery Co Dam
Dam	Chicopee City Electric Lighting Department Dam
Dam	Holcomb, A R, Dam No. 2
Dam	Hudson Chester Emery Mills Dam No. 1
Dam	Chester Water Works Dam
Dam	Hudson Chester Emery Mills Dam No. 2
Dam	Steinhart, Theodore, Dam
Dam	Sitnick, M, Dam
Dam	Cote (Est) Dam
Dam	Kimball, H Earl, Dam
Dam	Kellogg, F T, Dams
Dam	Stows Pond Dam

Dam	Phelon, C, Dam
Dam	Springfield City Water Works Dam
Dam	Frisbee, Nelson, Dam
Dam	Thompson, F, Dam
Dam	Palmer Water Works Dam
Dam	Carpentier, V, Dam
Dam	Bumstead, Horace Dam
Dam	Wesson, W B, (Est) Dam
Dam	Whiting Street Storage Reservoir Dam
Dam	Whiting Street Intake Dam (lower)
Dam	Tannery Reservoir Dam
Dam	Holyoke Dam aka High Service Dam
Dam	Bray Reservoir Dam
Dam	Ashley Reservoir Dam
Dam	Gaylord, Emerson, Dam
Dam	Moulton, W C, Dam No. 3
Dam	McGray, Lincoln, Dam No. 1
Dam	Fearing Whitten Co Dam
Dam	Monson Associates Corp Dam
Dam	Ellis, A D, & Sons Dam No. 1
Dam	Ellis, A D, & Sons Dam No. 3
Dam	Eger Brothers Dam

Dam	Moulton, W C, Dam No. 2
Dam	Moulton, W C, Dam No. 1
Dam	Rubwood Wheel Co Dam
Dam	Van Wagner, Ralph, Dam
Dam	Fuller, F W, Dam
Dam	Monson State Hospital Dam No. 1
Dam	McGray, Lincoln, Dam No. 2
Dam	Ricketts & Shaw Dam
Dam	Carmody, Anna, Dam
Dam	Bray, Frank G, Dam
Dam	Hunt, Simon S, (heirs) Dam
Dam	Kibbe, N S, Dam
Dam	Smith, R S, Dam
Dam	Kibbe, Winthrop, Dam
Dam	Driscoll, Margaret, Dam
Dam	Butterworth, Dwight E, Dams
Dam	Monson State Hospital Dam No. 2
Dam	Baldwin, R A, Dam No. 1
Dam	Thorndike Co Dam No. 2
Dam	Whittall, M J, Associates Dam
Dam	Flint, George C, Dam
Dam	Palmer Trucking Co Dam

Dam	Bradway, C A, Dam
Dam	Rubwood Wheel Co Dam No. 2
Dam	Burdick, James J, Dam
Dam	Westfield City Water Works Dam No. 3
Dam	Holyoke Water Power Co Dam, aka Holyoke Dam
Dam	Green, S M, Dam
Dam	Bradway, C P, Dam NO. 1
Dam	Baldwin, R A, Dam No. 1
Dam	Flint, Lyman C, Dam
Dam	Nicolet, Anna D, Dam
Dam	Westfield City Water Works Dam No. 1
Dam	Westfield City Water Works Dam No. 2
Dam	Monson Town Water Works Dam
Dam	Gurton, Lee N, Dam
Dam	Wyszatychi, John, Dam No. 1
Dam	Gold, Walter, Dam
Dam	Hall, Andrew J, Dam
Dam	Howlett, Oliver, Dam
Dam	Wells, Cora, Dam
Dam	Hamilton Woolen Co Dam
Dam	Alexander, E Warren, Dam
Dam	Holyoke Water Works Dams (6)

Dam	Thorndike Co Dam No. 1
Dam	Dean, Oscar B, Dam
Dam	Clark, Ledru R, Dam
Dam	Squire, Edgar, Dam
Dam	Boston Duck Co Dam - Barrett's Junction
Dam	Boston Duck Co Dam - lower
Dam	Boston Duck Co Dam - higher
Dam	Boston Duck Co Reservoir Dam
Dam	Thorndike Co Dam No. 3
Dam	Massachusetts Comm Fish Hatchery Dams
Dam	Thompson Lake Dam
Dam	Central Massachusetts Power Company Dam
Dam	Holbrook, Arthur, Dam
Dam	Sullivan Brothers Dam
Dam	Wing, G H, Dam
Dam	Tindal, David, Dam
Dam	Boysseau, Joseph, Dam
Dam	Korsen, Paul, Dam
Dam	Langewald, A A, Dam
Dam	Cunningham, William, Dam No. 1
Dam	West Springfield Town Water Works Dams (4)
Dam	Fowler, James, Dam

Dam	Buschman, J C, Sons Tobacco Co dam
Dam	Westfield City Water Works Reservoir Dam
Dam	Teombick Dam, Andrew, Dam
Dam	Westfield River Dams
Dam	Fossa, Peter, Dam
Dam	West Springfield Town Water Works Dam
Dam	Kneip, Frank, Dam
Dam	Springfield Country Club Dam
Dam	Green, Oliver L, Dam
Dam	Lyncosky, Felix, Dam
Dam	Rockwell & Mosely Dams
Dam	Mars Paper Co Dam
Dam	Cunningham, William, Dam No. 2 (Booth & Co Ltd)
Dam	Bradley, Everett E, Dam
Dam	Bramble, A D, Dams
Dam	Stuart, George, Dam
Dam	Foster Machine Co Dam
Dam	Prosser, J T, Dam No. 1
Dam	Chicopee Manufacturing Corp Dam
Dam	Crane & Co Dam
Dam	Springfield Boys' Club Dam
Dam	Westfield Green Marble Works Dam

Dam	Rorabaugh, James E, Dam
Dam	Fuller, Lewis, Dam
Dam	Osden Dam
Dam	Springfield City Water Works Sedimentation Reservoir Dam
Dam	Saloomey, S, Dam
Dam	Hampden County
Dam	Springfield City Water Works Dam
Dam	Springfield Ice Co Dam
Dam	Radner, Samuel, Dam
Dam	Day, A E, Dam
Dam	Club Realty Co Dam
Dam	Handy, H L, Dam
Dam	Bray Lake Dam aka State Reservation Dam
Dam	Wales Pond Dam
Dam	Bray, Dwight R, Dam
Dam	Clark, Alva L, Dam
Dam	Heimann & Lichten Inc Dam
Dam	Meacham, W G, Dam
Dam	Stephens, J, Arms Co Dam No. 2
Dam	Labelle, Joseph, Dam
Dam	Calkins, Judson R, Dam
Dam	Bradway, C P, Dam NO. 1

Dam	Kennedy, P J, Dam
Dam	Aldrich Dam
Dam	Chicopee City Water Works Dam - Cooley Brook
Dam	United States Whip Co Dam
Dam	Alden Brothers Dam
Dam	Kasperzak, Joseph, Dam
Dam	Burelle Dam
Dam	Slate, William D, Dam
Dam	Prosser, J T, Dam No. 2
Dam	Pickerel Pond
Dam	Shaws Pond
Dam	Chapin Pond
Dam	Carver, Elmer H, Dam
Dam	Drobat, Joseph, Dam
Dam	Kowalzik, Anthony Dam
Dam	Allen Brothers Dam
Water	Round Hill Pond
Water	Holland Pond
Water	Island Pond
Water	Loon Pond
Water	Bass Pond
Water	Venturers Pond

Water	Soland Pond
Water	Harmon Pond
Water	Buck Pond
Water	Cranberry Pond
Water	Hall Pond
Water	Duck Pond
Water	Second Pond
Water	Lyons Pond
Water	Parsons Pond
Water	Mona Lake
Water	Hampden Pond
Water	Lost Pond
Water	Westfield River
Water	Shatterack Pond
Water	Great Pond
Water	Wood Pond
Water	Long Pond
Water	Dimmick Pond
Water	Horse Pond
Water	Lily Pond
Water	Brown Pond
Water	Pattaquattic Lake

Water	Goose Pond
-------	------------

Water	Minechoag Pond
-------	----------------

Water	Bald Peak Pond
-------	----------------

Water	Five Mile Pond
-------	----------------

d25071

REPORT
HAMPDEN COUNTY DAMS
1925

CONTENTS.

INTRODUCTION.....	PAGE 1.
AGAWAM.....	3.
BLANDFORD.....	5.
BRIMFIELD.....	9.
CHESTER.....	12.
CHICOPEE.....	15.
CHICOPEE RIVER.....	19.
EAST LONGMEADOW.....	22.
GRANVILLE.....	22.
HAMPDEN.....	26.
HOLLAND.....	30.
HOLYOKE.....	32.
LONGMEADOW.....	36.
LUDELOW.....	37.
MONSON.....	39.
MONTGOMERY.....	49.
PAIMER.....	50.
RUSSELL.....	55.
SOUTHWICK.....	56.
SPRINGFIELD.....	59.
TOLLAND.....	64.
WALES.....	66.
WESTFIELD.....	70.
WESTFIELD RIVER.....	77.
WEST SPRINGFIELD.....	74.
WILBRAHAM.....	79.
CONCLUSION.....	80.
APPENDIX #1.....	82.
APPENDIX #2.....	85.

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 790

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 29, 1925.

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Honorable The Board of County Commissioners of Hampden County,
Springfield, Massachusetts.

George S. Cook, Chairman.

Dear Sir:

According to your instructions, I have made an inspection of all the dams in the county relative to their condition and safety upon which I submit the following report.

The total number of dams inspected was 295, of which 206 back up water or form ponds, as the remaining 89, none of which are now in use, have openings through them and do not retard the natural stream flow.

While these latter structures after inspection might not be further considered, nevertheless, it was thought advisable to record them in this report in order that they will be known and can be disregarded in any inspections that may have to be made in the future. For the same reason it was thought advisable to record the ponds found without dams, that is, the natural ponds, so called.

Throughout the report it may be stated that not only is the name of the town given, but also the established local or place name, if any, where each dam is located. It may also be stated that the name of the stream upon which each dam is located, is that given on the state topographical map and, where there is no name given on the map, the local name is given that the stream is known by.

Where a dam is built across a stream which is the boundary line of two towns with a part of the dam in each town, the dam is classified as belonging to the town in which the plant attached is located. For instance, the Ludlow Manufacturing Associates dam, which is built across the Chicopee River with a part in Ludlow and a part in Wilbraham, is classified as located in the town of Ludlow, because the plant or establishment attached thereto is located in the town of Ludlow. On the other hand, the Collins Manufacturing Company dam, which is also built across the Chicopee River with a part in Ludlow and a part in Wilbraham, is classified as being located in the town of Wilbraham, because the plant attached thereto is located in the town of Wilbraham.

In the arrangement of the report the towns have been placed in alphabetical order and the dams in each are listed and described thereunder except in the case of the Chicopee and Westfield Rivers where the dams on each, while listed in the towns in which they are located, are described under Chicopee and West Springfield respectively.

Where the length and height of a dam is given, it means, unless otherwise stated, its maximum length as measured along the top and the maximum height to the top above the natural stream-bed, or in the case of a spillway dam proper to the crest of the spillway.

In the following table, the number of dams in each town classified as described above, are given, likewise the natural ponds in each town.

TABLE.

NAME OF TOWN	DAMS FORMING PONDS	DAMS NO LONGER FORMING PONDS.	NATURAL PONDS NOT RAISED BY DAMS
Agawam	6	2	0
Blandford	6	9	2
Brimfield	7	4	1
Chester	5	6	1
Chicopee	21	2	0
East Longmeadow	0	1	0
Granville	6	15	2
Hampden	11	4	0
Holland	2	5	2
Holyoke	12	2	0
Longmeadow	2	0	0
Ludlow	8	0	7
Monson	33	5	2
Montgomery	4	3	1
Palmer	14	5	3
Russell	7	0	0
Southwick	4	5	2
Springfield	19	1	10
Tolland	5	4	2
Wales	9	4	0
Westfield	9	9	3
West Springfield	14	0	0
Wilbraham	2	3	2
Total	206	89	40

AGAWAM

There are eight dams in Agawam, six of which are on Three Mile Brook and its tributaries and two on tributaries to Still Brook.

Three Mile Brook rises in Agawam about one and one-half miles northwest of Agawam Center and flows southeasterly to the Connecticut River into which it empties on the north side of Riverside Park. It is three miles in length and has a total drainage area of about ten square miles.

L. L. WHITMAN DAM.-- Ascending the brook, at a point about five hundred feet from its mouth, where the drainage area contributory is practically the total drainage area of the brook, that is, ten square miles, is an old dam which formerly belonged to L. L. Whitman and to which was attached a paper mill. The mill has gone out of existence years ago, and, since only a part of the dam remains, no future inspection of it will be necessary.

BATTISTA BONOMI DAM.-- On the north tributary of Worthington Brook, which in turn is a tributary of Three Mile Brook, into which it empties from the west about fifteen hundred feet above the mouth of the latter, is a dam belonging to Battista Bonomi, Agawam, Mass. This dam is located at Hubbard Corners, where the drainage area contributory is two-tenths of a square mile.

It is an earthen embankment faced upstream with a concrete wall about fourteen inches thick, seventy feet in length and six feet in height, with a concrete spillway twelve feet in length, built in the structure. This spillway is of ample capacity. The dam is in good condition and forms a small ice pond not more than one-quarter of an acre in area.

HARVEY PORTER DAM.-- On Tarkill Brook, which is another tributary from the west of Three Mile Brook, is located a dam belonging to Harvey Porter, Agawam, Mass. The location of the structure is about one-third of a mile upstream from the confluence of the brooks, where the drainage area contributory is about three-quarters of a square mile. The structure, which is an earthen embankment, that formed a pond of four acres in area, has not been in use for some years and now has a free water way through it. Hence, no future inspection of it will be necessary.

AGAWAM SPORTSMAN'S CLUB DAM.-- This is on another tributary of Three Mile Brook from the west, named the Agawam Company Brook. It is located about two thousand feet above the confluence of the brooks, a short distance above the Agawam Company Mill, at a point where the drainage area contributory is about one and one-half square miles and belongs to the Agawam Sportsman's Club, Agawam, Mass.

The dam is an earthen embankment four hundred and twenty-five feet in length and ten feet in height. There are two concrete spillways, one in the dam, at or near its center, and the other at the end of a canal three hundred feet in length, which runs from its north end. The crests of the spillways are only two feet below the top of the embankment, and it is recommended, in order to increase the factor of safety against any failure of the structure which might be caused by flood flows overtopping the embankment, that the embankment be raised one foot, making it three feet above the crests of the spillways.

It is also recommended that the damage, done by erosion around the foundation of the spillway in the dam, be repaired.

The pond formed by the dam is about two and one-half acres in area and is used as a pleasure pond.

AGAWAM COMPANY DAM NO. 1.-- Upstream about four hundred feet from the Agawam Sportsman's Club dam (last described), at a point in the brook where the drainage area contributory is practically one and one-half square miles, is a dam belonging to the Agawam Company, Agawam, Mass.

This structure is an earthen embankment of ample dimensions about one hundred and seventy-five feet in length and having a maximum height of about twelve feet. The overflow, or spillway, is at its south end. It is a concrete structure thirteen feet in length, with a horizontal apron attached and with its crest three feet below the top of the dam.

The pond formed by the dam is about eight acres in area, from which water is conveyed in a canal to the Agawam Company Woolen Mill, located about three hundred feet, or thereabouts, below. This mill was established in 1912 and is a going concern. The dam is in good condition.

AGAWAM COMPANY DAM NO. 2.-- About one-half mile upstream from the Agawam Company dam No. 1, at a point where the drainage area is a little over a square mile, is another dam owned by the Agawam Company, Agawam, Mass.

It is an earthen embankment two hundred feet in length, eighteen feet in height, and carries the highway. The spillway is located at its south end and is built of concrete. It is nine feet wide with its crest three feet below the top of the dam. A sluice gate is fashioned in the middle of the spillway for the purpose of regulating the flow to the pond below, and the highway is carried over the spillway by a bridge.

In the downstream face of the dam, north of the spillway abutment, there is a leak, at a point about four feet below the top of the embankment, and it is recommended that this leak be repaired. It is also recommended that the trees, growing on the upstream side of the dam, be cut down as they impair the stability of the structure by rocking in windy weather, and by the extension of their roots through the embankment that might cause leakage eventually. The area of the pond formed is about fifteen acres and is an ice pond.

L. F. HART DAM.-- This structure is located in the southwest corner of the town of Agawam on a tributary to Still Brook from the west, at a point near the highway where the drainage area contributory is one-fifth of a square mile, and belongs to L. F. Hart, Feeding Hills, Mass.

It is an earth embankment two hundred and fifty feet in length, three feet only in height, and carries a roadway on its top.

The structure is in good condition and forms a shallow pond about five acres in area.

W. D. RISING DAM.-- This dam is on another tributary of Still Brook from the west, into which it empties about one and one-half miles upstream from the Massachusetts-Connecticut boundary line. It is located near the mouth of the tributary on which it is built, where the drainage area is about one-half of a square mile and belongs to W. D. Rising, Feeding Hills, Mass.

The dam is an earthen embankment three hundred feet in length, eight feet in height, and carries the highway on its top. The spillway is a stone culvert under the highway four feet high and five feet wide on the downstream side.

The structure forms what is known as Leonard Pond, from which water was drawn, in the past, to run the sawmill attached. This old mill still stands but is in a dilapidated condition, and apparently abandoned for good. The dam is in good condition.

BLANDFORD

There are fifteen dams and two natural ponds in Blandford. One of these dams is on Borden Brook, one on a tributary to Borden Brook, four on Peeble Brook, one on Birch Meadow Brook, one on Pond Brook, one on Watson Brook, two on Wheeler Brook, one on a tributary to Wheeler Brook, one on Potash Brook, one on a tributary to Potash Brook, and one on Freeland Brook.

Of the natural ponds, one is on the headwaters to a tributary of Freeland Brook, and the other on Watson Brook, a tributary of Pond Brook, which, in turn, is a tributary of Peeble Brook.

CITY OF SPRINGFIELD WATER WORKS (BORDEN BROOK RESERVOIR DAM.)-- This structure is located on Borden Brook which rises in Black Pond two and one-half miles northwest of West Granville, thence flows northeasterly and easterly to Peeble Brook which it joins to form the Westfield Little River. It is about four and one-half miles in length and has a total drainage area of ten and one-third square miles. The Water Works dam is located upstream about two miles from its confluence with Peeble Brook, in close proximity to the Blandford-Granville boundary line, at a point where the drainage area tributary is eight square miles.

The structure is an earthen embankment seven hundred feet, or thereabouts, in length, seventy-five feet in height, with the spillway at its south end.

The reservoir formed has a surface area of two hundred and thirty acres and a capacity of three hundred and thirty-four millions of cubic feet. The dam, which was built in 1909, and all appurtenances connected are in good condition.

SPRINGFIELD WATER WORKS (BATES TANNERY DAM)-- On Tannery Brook, a tributary of Borden Brook from the south, at a point about one thousand feet from its mouth, and three hundred and fifty feet, or thereabouts, south of the highway, where the drainage area tributary is one and one-quarter square miles, is located the Bates Tannery Dam. Only traces are to be seen, at present, of this structure to which a sawmill and tannery were, in years past, attached. The property now belongs to the City of Springfield, and no future inspection of it will be necessary.

CURTIS PHELON DAM-- Peeble Brook rises in the northwest corner of the town of Blandford; flows to the southeast corner of Blandford where it joins with Borden Brook to form the Westfield Little River. It is about nine and one-half miles in length and has a total drainage area tributary of thirty-one and three-quarters square miles. About fifteen hundred feet above its confluence with Borden Brook, at a point where the drainage area tributary is thirty square miles, are the traces of a dam, which formerly belonged to Curtis Phelon, Blandford, Mass., and which is supposed, at present, to belong to the City of Springfield Water Works.

Since only traces of the dam are left, no future inspections of it will be necessary.

KARR DAM-- About two and one-half miles upstream from the Phelon Dam (last described), at a point where the drainage area tributary is twenty-five and three-quarters square miles, is located the old Karr sawmill dam, so called.

This structure, however, failed years ago and, only traces of it are now left. Hence future inspection of it will be unnecessary. The property now belongs to the City of Springfield.

J. E. PERKINS DAM.-- Upstream three-quarters of a mile from the last dam described, at a point where the drainage area contributory is ten and one-third square miles, is a dam which belongs to J. E. Perkins, Blanford, Mass. To this structure was connected a grist and sawmill which went out of existence about twenty-five years ago. Little of the dam is now left, it having gradually worn away. Consequently, no future inspection of it will be necessary.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY OWNED BY F. M. & B. H. WAITE.)

About three miles upstream from the last described dam, at a point in the brook where the drainage area contributory is three and three-quarters square miles, is a dam which formerly belonged to, and was known as, F. M. & B. H. Waite dam, but which now is supposed to belong to the City of Springfield.

The "head" at this point was sixty feet, and the power developed ran a card factory in which a dozen men were usually employed. The pond formed by the dam was of considerable size known as North Meadow Pond. This pond is no longer in existence as the dam has gone out or been taken down, and no future inspection of it will be necessary.

CHARLES A. BROWN DAM.-- Birch Meadow Brook rises on the west slope of Birch Hill and flows south to Peeble Brook into which it empties, at a point about one thousand feet upstream from the confluence of Peeble and Borden Brooks. It is about two miles in length and has a drainage area contributory of two square miles.

About one and one-quarter miles upstream from its mouth, where the drainage area contributory is three-quarters of a square mile, is a sawmill dam belonging to Charles A. Brown, Blanford, Mass. This is a dry stone masonry spillway structure, backed with earth, is sixty feet in length and six feet in height. From its east end a canal was built to the sawmill, located about one thousand feet downstream, near the highway.

The pond formed by the dam is about four acres, and is now used as an ice pond. The canal and mill have not been in use for thirty years, and the mill is in ruins.

The dam is kept in a kind of repair for the purpose of maintaining the ice pond. It is not, however, in very good condition, but, should it fail, because of the shallow pond behind it, the released water would not, it appears, do any material damage.

HIRAM L. BLAIR ESTATE DAM.-- Pond Brook rises on the north slope of Barnes Mountain in the town of Tolland, flows northerly and easterly to Peeble Brook, into which it empties at a point about three miles from the mouth of the latter. Pond Brook is five miles in length and has a total drainage area of eleven and three-quarters square miles.

About two miles upstream from its mouth, or about one-half mile south of Blair Pond, at a point where the drainage area contributory is six square miles, is a dam belonging to the Hiram L. Blair Estate, Blanford, Mass. This is a dry, ^{stone} masonry structure, fifty feet in length and twenty feet in height. The dam is in a dilapidated condition and the mill a wreck.

Inasmuch as the pond formed is next to nothing, no future inspection of it will be necessary.

CITY OF SPRINGFIELD WATER WORKS DAM (PEEBLE DAM)-- Watson Brook rises on the southwest slope of Walnut Hill, flows southeast through Blair Pond and empties into Pond Brook, at a point about one and one-half miles upstream from the confluence of Pond and Peeble Brooks. It is two and one-half miles in length and has a total drainage area of four square miles.

About five hundred feet upstream from the mouth of Watson Brook, or one thousand feet downstream from Blair Pond, at a point where the drainage area contributory is four square miles, is a sawmill dam which, formerly, belonged to Sylvester Poebles, but which now belongs to the City of Springfield Water Works. This dam as well as the other derelicts above mentioned, belonging to the Springfield Water Works, were purchased, it seems, for the protection of the water shed.

It is a dry stone masonry structure one hundred feet in length and eighteen feet in height. At its west end is located a spillway which is twenty-five feet in length. The sawmill attached to the dam is practically all gone with only traces of it left. The penstock, which connected the dam and the mill, is filled with debris, and the spillway covered with a growth of brush. It now forms no pond, and no future inspection of it will be necessary.

BLAIR POND.-- This is a natural body of water situated on Watson Brook about one thousand feet upstream from the last described dam. It has a surface area of seventy-three acres, a drainage area of three and three-quarters square miles, and has no dam across its outlet.

ARTHUR LEE DAM.-- Wheeler Brook rises in a small pond just across the Blandford-Otis boundary line, in the town of Otis, thence flows easterly into Blandford to Peeble Brook into which it empties at North Blandford Center. Wheeler Brook is one and three-quarters miles in length and has a total drainage area of two and three-quarters square miles.

Upstream about one thousand feet from its mouth, at a point where the drainage area is two and three-quarters square miles, is located a dam belonging to Arthur Lee, North Blandford, Mass.

This is a dry stone spillway structure with a log crest, backed with planking and earth. Its length is eighty feet and its height eight feet. From its north end, water was conveyed in a canal to the carriage shop and turning mill, located about sixty-five feet downstream. Water power is no longer used, however, in this establishment, as it has been replaced by a gasoline engine.

The dam is not in very good condition, and is practically abandoned. Inasmuch as the pond formed by it is very small, should the structure fail, it does not seem as if any material damage would be done by the released water. If the pond, however, is to be maintained, the structure should be repaired.

ALBERT GIBBS DAM.-- About a mile upstream from the last described dam, at a point where the drainage area contributory is one square mile, is located a dam belonging to Albert Gibbs, North Blandford, Mass.

This dam was built about three years ago to form an ice pond. It is a dry stone masonry spillway structure seventy feet in length, seven feet in height and faced upstream with planking.

The pond formed is about two acres in area and used as a fishing pond as well as an ice pond. The dam is not in very good condition as it leaks considerably, and it is recommended that the structure be repaired or the pond drawn down.

MRS. E. K. LINCOLN DAM.-- This dam is located across the outlet of Long Pond, where the drainage area contributory is three-quarters of a square mile and belongs to Mrs. E. K. Lincoln, Blandford, Mass.

It is an earthen embankment faced downstream with stone masonry, and paved upstream with cobblestones. The structure is two hundred and fifty feet in length and six and one-half feet in height. Its spillway is located eighty feet from its west end and is of ample capacity.

1925

The dam was built in 1898 and is in good condition except the east retaining wall of the spillway, where some of the stone-work has been ruptured which should be repaired.

Long Pond is a natural pond raised by a dam across its outlet. Its surface area is fifty-eight acres.

FRANK R. DUNLAP DAM.-- Potash Brook rises in Blanford just north of Blanford Center, flows southeast into Russell, and then through Russell to the Westfield River into which it empties at Woronoco. It is five and one-half miles in length and has a total drainage area of six and three-quarters square miles.

On this brook, about one mile southeast of Blanford Center, at a point where the drainage area contributory is about one-half square mile, is a dam belonging to Frank R. Dunlap, Blanford, Mass.

The dam is divided into two parts by a short stretch of high natural ground. The western part, which is eighty-two feet in length, is built of earth paved upstream with stone, and the eastern part is built of concrete in which is located the spillway twelve feet in length. The height of the dam is thirteen feet above the bed of the stream.

The part built of earth failed some time ago, making a breach in the structure thirty feet in width. The dam was built in 1914 to form a pleasure pond for fishing, boating, and bathing, and was about eight acres in area.

Inasmuch as the structure has failed, and that there is a free water way for the brook, no future inspection of it will be necessary unless the breach in the structure is rebuilt.

SYLVESTER PEEBLE DAM.-- On a small tributary of Potash Brook, about one mile southeast of Blanford Center, at a point where the drainage area is less than one-tenth of a square mile, is located a dam belonging to Sylvester Peeble, Blanford, Mass.

This structure is about one hundred feet in length and four feet in height with a spillway at its west end. The structure is in fair condition and forms an ice pond which covers about two acres.

EMMA K. COWLES DAM.-- Freeland Brook rises in Cochran Pond, and flows southeast and northeast through Blanford and Russell to the Westfield River into which it empties at Russell Center. It is four and one-half miles in length and has a total drainage area of eleven square miles.

Upstream one-half mile from the Blanford-Russell boundary line, and about two miles east of Blanford, at a point where the drainage area contributory is three and one-half square miles, is located a dam belonging to Emma K. Cowles, Russell, Mass.

It is a log crib structure about six feet in height, located at the top of a cascade, where, with the fall of the cascade, it forms a "head" in the neighborhood of thirty-five feet. There was a sawmill attached, which went out of existence about twenty-five years ago.

Part of the structure is now gone out, and no pondage is formed behind it. Hence, no future inspection of it will be necessary.

COCHRAN POND.-- Cochran Pond is a natural body of water in which Freeland Brook, (last described) rises. It is located about two miles north of Blanford Center, has a drainage area of not more than one-sixth of a square mile, and, at some time in the past, had a dam about five feet in height across its outlet. This structure, however, has gone out, leaving the pond again in its natural state.

BRIMFIELD

There are eleven dams and one natural pond in Brimfield. Of the dams, there are two on the Quinebaug River, two on tributaries of the Quinebaug River, two on East Brook, four on Elbow Brook, and one on Blodgett Mill Brook. The natural pond is on East Brook.

The Quinebaug River rises in the town of Wales, flows easterly and southerly through the towns of Southbridge, and West Dudley into Connecticut; thence through Connecticut to join the Shetucket River until it finds its way into the Thames at Long Island Sound. Its total drainage area is seven hundred and twenty-five square miles, and that part in Massachusetts is one hundred and sixty-three square miles.

SNELL MANUFACTURING COMPANY DAM.-- In East Brimfield, at a point in the stream where the drainage area tributary is fifty-five square miles, is located a dam belonging to the Snell Manufacturing Company, East Brimfield, Mass.

This is a low log diversion structure eighty-five feet in length, and not over one and one-half feet in height, laid across the bed of the stream which is ledge and the top of a series of cascades that create a natural fall at this point. The structure is in good condition but because of its height, should it fail, no material damage would be done by the released water.

The Snell Manufacturing Company made augurs and bits, in which business a considerable number of hands was employed. The establishment, however, was shut down about four years ago, and the business moved to Snellville, a place between Fiskdale and Sturbridge.

J. N. PELLETIER DAM.-- About five miles upstream from the Snell Manufacturing Company dam, and about one-half mile southwest of Brimfield Center, where the river is called Millbrook, and where the drainage area tributary is six and one-quarter square miles, is a dam belonging to J. N. Pelletier, Brimfield, Mass.

The structure was built in 1812, and the power developed, thereat, ran a saw and gristmill. The dam carries the highway on its top, and is an earthen embankment faced with dry stone masonry up and downstream. Its height is thirteen feet, and the crest of the spillway is four feet below the top of the dam. The length of the dam is four hundred feet, the length of the spillway twenty-four feet, and the pond formed about twenty acres in area.

The sawmill is still a going concern, but the gristmill, which was at the opposite end of the dam, has not been in use for years. Through the dam are two penstocks, one which conveys water to the sawmill, and the other which conveyed water to the gristmill.

The sluice gate in the latter seems to leak, and should be repaired. In the north corner of the spillway, there is a leak which should also be repaired, and the loose stones in the upstream facing reset firmly in place.

The dimensions of the dam and spillway are ample, and there will be no danger of failure if kept in proper repair.

W. B. CHENEY DAM.-- This structure is located in the very northeast corner of the town of Brimfield, on a tributary of the Quinebaug River, that flows through Long Pond in Sturbridge, and empties into the Quinebaug, about a mile downstream from East Brimfield.

The dam forms what is known as Baker Pond, has a drainage area tributary of two and one-half square miles and belongs to W. B. Cheney, Brimfield, Mass.

The structure is an earthen embankment one hundred and ninety

feet in length and twelve feet in height. It is faced on both sides with dry stone work. The spillway is not connected with the dam, but is located about three hundred feet away from it on natural ground.

The dam appears to be stable even if in a dilapidated looking condition because of the neglect of minor repairs. The old mill attached, which apparently was a sawmill, has long since gone out of existence with only traces of its foundation left.

WILLIAM DUPREY DAM.-- This structure is built across the outlet of Little Alum Pond, which is a tributary to the Quinebaug River into which it empties at East Brimfield. This tributary is about two miles in length, and has a total drainage area of one and one-third square miles. Little Alum Pond is located one and one-half miles north of East Brimfield, has a surface area of sixty acres and a drainage area of three-quarters of a square mile.

The ownership of the dam and the land around it is claimed by Wm. Duprey, East Brimfield, although it seems that the dam and the flowage rights of the pond, are controlled by the Hamilton Woolen Mills of Southbridge, Mass.

The dam is an earthen embankment about one hundred feet in length and nine feet in height. The spillway is in the center of the dam, is rather small in discharging capacity, and in poor condition as the earth-work around it is washed away and also its crest tumbled down.

Evidently the pond is a natural body of water raised by the dam, to which was attached a small gristmill that was abandoned in 1833. It is recommended that the dam be repaired or the spillway be lowered until the pond is returned to its natural height.

GREAT POND.-- Great Pond is a natural body of water, located about three-quarters of a mile north of Brimfield Center on East Brook, which is a tributary of the Quinebaug River into which it empties about one-half mile south of Brimfield Center. East Brook is three and one-half miles in length and has a total drainage area of six square miles. The drainage area of Great Pond is five and one-third square miles, and its surface area covers about fifty acres. There is no dam across its outlet.

E. H. MORGAN DAM NO. 1.-- On East Brook, upstream about one-half mile from Great Pond, at a place called "Little Rest" where the drainage area tributary is three and three-quarters square miles, is located a dam belonging to E. H. Morgan, Brimfield, Mass.

It is an earthen embankment with dry stone facing up and down stream, one hundred and twenty feet in length and eight feet in height. The structure is not now in use as an opening had been made through the dam for the free discharge of the brook, and no future inspection of it will be necessary.

The plant connected with this dam, in the past, made hames and shoe nails, and it was here where the Concord hames were first made. The plant, however, has gone out of existence years ago, and only a trace of it remains.

E. H. MORGAN DAM NO. 2.-- About six hundred feet upstream is dam No. 2. This also belongs to E. H. Morgan of Brimfield, Mass., to which a saw and gristmill were attached until about twenty years ago, when both mills were abandoned. The dam is an earthen embankment about one hundred and ten feet in length and twelve feet in height. Like the last dam described, an opening was made through it for the free discharge of the brook, and no future inspection of it will be necessary.

Some fifty years ago the establishments attached to both dams employed a number of hands and made the place a very busy little center, because of which the name of "Little Rest" was given to it.

M. A. GOETZ DAM.-- Elbow Brook rises on the west slope of Mt. Hitchcock in the town of Monson, then flows northeast into Brimfield, and through Brimfield to the Quaboag River into which it empties near the east end of the Monson-Palmer boundary line. Elbow Brook is four miles in length and has a total drainage area of ten square miles.

At a point about one-half mile from its mouth, where the drainage area contributory is eight and one-third square miles, is a dam belonging to M. A. Goetz, Palmer, Mass. The dam is a small diversion concrete structure which diverts the brook water into a partly excavated basin used as an ice pond. The dam is not more than thirty feet in length, and is only three feet in height.

Since it backs up little water, and practically forms no pond, no future inspection of it will be necessary.

F. F. ISAACS DAM.-- Upstream about three-quarters of a mile from the M. A. Goetz dam, last described, on the south side of the road leading from Palmer to Brimfield, at parkville, so called, where the drainage area contributory is six and one-half square miles, is a dam belonging to F. F. Isaacs, 82 Leyfred Terrace, Springfield, Mass.

The dam is three-hundred and fifty feet in length and ten feet in height. The spillway, which is forty feet in length, is located about one hundred and twenty feet from its east end. This was rebuilt of masonry, backed with gravel about three years ago, and is a solid piece of work. At each end of the spillway, next to the abutments, is laid a penstock through the embankment. The one on the west end served a sawmill, and the other on the east end, a gristmill.

Neither of these establishments, however, has been in existence for the last quarter of a century at least, and only traces of their foundations remain. The penstock, which was connected with the gristmill, is considerably deteriorated, and breaking down, thus causing the falling in of the embankment around it.

Such a condition will cause failure of the structure sooner or later, and as its pondage might cause damage, if suddenly released, I recommend that the structure be repaired at once or else the pond be drawn down and kept down until repaired.

F. R. HUMPAGE DAM.-- About one-half mile upstream from the Isaacs dam at a place called Dingley Dell where the drainage area contributory is three and one-third square miles, is located a dam belonging to F. R. Humpage, Palmer, Mass.

It is a dry stone masonry spillway structure backed with earth which forms a pond not over one-half an acre in area. The pond is used for pleasure purposes and to run a small private hydro-electric plant, which is attached.

The dam is ninety feet in length and thirteen feet in height laid on a ledge foundation. There is some leakage along the foundation of the structure. This leakage is not serious now, but may become so later. Hence, it is advisable that it be repaired.

CHARLES H. KAPLINGER DAM.-- This dam is located on a tributary which joins Elbow Brook about a mile above the Humpage dam. Its location on the tributary is about five hundred feet from its mouth, at a point where the drainage area is one-half square mile.

The structure is an earthen embankment one hundred and twenty feet in length and ten feet in height with a concrete spillway ten feet in length at its south end. The spillway, however, has failed some time ago, thus making a free passage way for the brook, and no future inspection of the structure will be necessary.

Considerable debris, however, is collected around the broken-down spillway, which, in time, may increase and cause trouble. It is recommended, therefore, that this debris be removed and that the water way be freed from accumulations of any kind.

L. D. FARRER DAM.-- Blodgett Mill Brook rises in Worcester County, two miles southeast of Warren Center, flows southwesterly, northwesterly and again southwesterly to the Warren-Brimfield, boundary line, thence through Brimfield to the Quaboag River into which it empties near West Brimfield. The brook is six miles in length and has a total drainage area of seven and one-half square miles.

At a point one mile from its mouth very near the Warren-Brimfield boundary line, where the drainage area contributory is six and three-quarters square miles, is located a dam belonging to L. D. Farrer.

The dam is a dry stone masonry structure backed with earth. It is sixty-six feet in length, twelve feet in height, and carries the highway on its top. Its spillway is twenty four feet in length, located in the center of the dam, over which is the highway bridge. To the structure was attached a saw and gristmill which have been abandoned years ago.

The dam is in good condition although the wood planking over the penstock, laid from the pond to the mill, is in poor condition and should be renewed.

CHESTER

In the town of Chester there are eleven dams and one natural pond. Two of these dams are on the middle branch of the Westfield River, four on the west branch of the Westfield River, four on Walker Brook, and one on Austin Brook, while the natural pond is on a tributary of the west branch of the Westfield River.

ERNEST L. ALDERMAN DAM.-- The middle branch of Westfield River rises in the northern part of the town of Peru, flows southeasterly through the towns of Middlefield, Northampton and Chester to the east branch of the Westfield River, which it joins about three-quarters of a mile upstream from Norwich Bridge. It is about nineteen miles in length and has a total drainage area of fifty-three square miles.

The dam on this branch of the Westfield River, is located two and one-half miles from its mouth at a place known as Littleville where the drainage area contributory is forty-nine square miles, and belongs to Ernest L. Alderman, Huntington, Mass.

The dam is divided into two parts by a high rock located in the middle of the stream. It is a log crib spillway structure laid on ledge, planked on the upstream side and backed with earth. The length of the spillway is one hundred and twelve feet and the height ten feet. To it is attached a sawmill which is a going concern.

The dam is in fair condition. Should it fail, however, because of the small size of the pond, which it forms, no material damage would be done by released water.

A. F. PIERCE DAM.-- About one and one-half miles upstream from the Alderman dam at a place known as Dayville, where the drainage area contributory is forty-seven square miles, is located a dam belonging to A. F. Pierce, Huntington, Mass.

The dam is a log crib structure planked upstream and backed with earth. It is one hundred and five feet in length between abutments, eight feet in height, and diverts water into a canal that connects with the sawmill some hundreds of feet downstream.

The dam is in fair condition except the east abutment which requires some repairs. The pond formed by the dam is small, and should failure of the structure occur, no material damage would be done by the released water.

ABRASIVE MINING & MANUFACTURING COMPANY DAM.-- The west branch of the Westfield River rises in the town of Washington, flows southeasterly through the towns of Becket, Chester and Huntington where it joins the Westfield River at Huntington Center. It is twenty-two miles in length and has a total drainage area of ninety-six square miles.

Upstream three miles from its mouth where the drainage area contributory is eighty-seven square miles, is a dam belonging to the Abrasive Mining & Manufacturing Company, Chester, Mass.

The dam is a log crib spillway structure one hundred feet in length and six feet in height. It failed some years ago when its central part went out during a flood flow. As the structure has not been rebuilt, it can be considered abandoned, and no future inspection of it will be necessary.

JACKSON MILLS EMERY COMPANY DAM.-- Upstream three and one-half miles from the Abrasive Mining & Manufacturing Company dam last described, at a point about one-half mile downstream from Chester Center where the drainage area contributory is seventy-three square miles, is a dam belonging to the Jackson Mills Emery Company. This dam is practically all gone out, and no future inspection of it will be necessary.

CHESTER ELECTRIC LIGHTING COMPANY DAM.-- About three-quarters of a mile upstream from the Jackson Mills Emery Company dam, last described, in Chester Center, at a point where the drainage area contributory is fifty-four square miles, is a dam belonging to the Chester Electric Lighting Company. This is only a small diversion dam not over one and one-half or two feet in height, and, therefore, no future inspection of it will be necessary.

HAMILTON EMERY & CORUNDUM COMPANY DAM.-- About two thousand feet upstream from the Chester Electric Lighting Company dam, last described, at a point where the drainage area contributory is fifty-three square miles is located a dam belonging to the Hamilton Emery & Corundum Company.

This is a small log crib spillway structure planked upstream, eighty-five feet in length and nine feet in height. It is in fair condition, and diverts water into a canal connected with the Hamilton establishment located six hundred feet downstream.

The pond formed by the dam is small, and even in case of failure of the structure, the released water would not be sufficient in quantity to do any damage.

HUDSON CHESTER EMERY MILLS DAM NO. 1.-- Walker Brook rises in the town of Becket one and one-quarter miles west of Becket Center, flows southeast and northeast to Chester Center where it joins the west branch of the Westfield River. It is nine miles in length and has a total drainage area of eighteen square miles.

Near its mouth in Chester Center, at a point where the drainage area contributory is practically the total drainage, that is, eighteen square miles, is a dam belonging to the Hudson Chester Emery Mills. It is a post deck structure laid on a ledge foundation one hundred feet in length and six feet in height. The power developed, formerly ran a feedstead factory, which has gone out of existence years ago. The structure is in a dilapidated condition with its central part gone out, and for this reason, no future inspection of it will be necessary.

NELSON & RICE TANNERY DAM.-- About five hundred feet upstream from the Hudson Chester Emery Mills dam, last described, at a point where the drainage area contributory is practically eighteen square miles, is located a dam to which was attached the Nelson & Rice Tannery.

This establishment went out of existence about fifteen years ago when the dam was also abandoned, of which only traces now remain, and therefore, no future inspection of it will be necessary.

THEODORE STEINHART DAM.-- Continuing upstream for a distance of eight hundred feet from the tannery dam, at a point where the drainage area contributory is seventeen and three-quarters square miles, is located a dam belonging to Theodore Steinhart, Chester, Mass.

It is an old log-crib structure planked upstream and backed with earth, sixty feet in length and twenty feet in height. The structure is in poor condition and not now in use. The owner, however, has under consideration the construction of a new dam the coming spring.

Because of the small pond formed by the structure, it does not seem as if any damage would be done, even should the structure fail and the pondage be suddenly released.

HUDSON CHESTER EMERY MILLS DAM NO. 2.-- About fifteen hundred feet upstream from the Steinhart dam, last described, at a point where the drainage area is seventeen and one-half square miles, is located another dam belonging to the Hudson Chester Emery Mills.

This is a log-crib spillway structure one hundred and ten feet in length and ten feet in height. It was abandoned some six or seven years ago, is in a dilapidated condition, holds back no water, and, therefore, no future inspection of it will be necessary.

CHESTER WATER WORKS DAM.-- This dam is located on Austin Brook, which is a tributary of Walker Brook into which it empties a short distance above the Hudson Chester Emery Mills dam No. 2, last described.

The dam is located about one-half of a mile upstream from the mouth of the brook, at a point where the drainage area contributory is one and one-quarter square miles. It belongs to the town of Chester Water Works and forms the intake Reservoir from which the water, which supplies the fire district, is drawn.

The structure is a masonry one, sixty feet in length and ten feet in height. The spillway, which is fifteen feet in length, is in the middle of the dam. Its crest shows some erosion between the joints of the stone-work which should be pointed. Otherwise, the dam is in good condition.

ROUND HILL POND.-- This is a natural pond located about one and one-half miles south of Chester, on Round Top Mountain, so called. The outlet of the lake is a tributary of the west branch of the Westfield River into which it empties, at a point about one and one-half miles downstream from Chester Center.

The surface area of the lake is less than ten acres and the drainage area about one-tenth of a square mile. There is no dam across the outlet.

CHICOPEE

There are twenty-three dams in the City of Chicopee, six of which are on Chicopee River proper, five on tributaries of the river from the south, nine on tributaries from the north, and three on Willimansett Brook, a tributary of the Connecticut River.

M. SITNICK DAM.-- On a tributary of the Chicopee River into which it empties from the south, at a point near Riverview Terrace five hundred feet north of Fairview Avenue, where the drainage area is not over one-quarter of a square mile, is located an ice-pond dam belonging to M. Sitnick, Chicopee, Mass.

The dam is an earthen embankment three hundred and ten feet in length and fourteen feet in height. Since the pond formed thereby has been drawn down and the basin now being filled with earth, no future inspection of the structure will be necessary.

CITY OF CHICOPEE ELECTRIC LIGHTING DEPARTMENT DAM.-- On Dingle Brook, a small tributary of Chicopee River, into which it empties from the south, is a dam belonging to the City of Chicopee Electric Lighting Department. It is located about three hundred feet upstream from the mouth of the brook and near Front Street, where the drainage area of the brook is one and one-half square miles.

The dam is an earthen embankment one hundred and five feet in length and about eleven feet in height. It seems as if it were abandoned and no longer kept in repair as there is a breach in the structure on the downstream side near the spillway.

Inasmuch as there is practically no pondage formed by the dam, but even if there were, in case of its failure, no damage would be done, because of the pond being in close proximity to the Chicopee River into which the released water could enter direct.

THE ROBERT AND EDWARD BEMIS DAM.-- Upstream on Dingle Brook about five hundred feet from the last described dam, or three hundred feet from Front Street, at a point where the drainage area is one and one-half square miles more or less, is located a dam belonging to Robert and Edward Bemis, Chicopee, Mass.

It is an earthen embankment three hundred and thirty feet in length and about twenty-seven feet in height. At a point about one hundred and fifty feet from its east end, the spillway is located, which is a masonry well four feet in diameter from which a pipe is laid through the dam thirty inches in diameter. The dam was built about seventy years ago, but has been increased in section and raised in height since then until it, now, forms a pond of about twenty-four acres.

There is some seepage along the toe of the dam especially towards its west end.

After several attempts failed to stop this seepage by dumping gravel on the upstream face of the structure, the owner concluded that the seepage was not from the pond, but a spring from the high natural bank against which the west end of the dam abuts.

In view of the large pondage behind the dam and the damage that might result from failure of the structure, it is recommended that, after the ice is harvested, that this seepage be more thoroughly investigated and traced to its source, as then the pond can be drawn down in all probability without much, if any, inconvenience to the owner.

OXFORD GOLF CLUB DAM NO. 1.-- This dam is on Poor Brook, a small tributary to the Chicopee River into which it empties from the south, about a mile downstream from the Bircham Bend Power Company dam. It is located upstream about one thousand feet from the mouth of the brook or five hundred feet downstream from East Main Street, at a point where the drainage area tributary is about one and three-quarters square miles, belongs to the Oxford Golf Club, and is used as a pleasure-dam.

It is an earthen embankment about one hundred feet in length and about seven feet in height. It is not in very good condition as the plank retaining walls of the spillway, which is located in the structure, are falling in. These should be repaired if the pond is to be maintained.

Inasmuch as the pond is very small and practically on the bank of the Chicopee River, even if total failure of the structure occurred, no damage would be done by the released water.

OXFORD GOLF CLUB DAM NO. 2.-- Upstream about six hundred feet from the Oxford Golf Club dam No. 1, on the other side of East Main Street, at a point where the drainage area is a little less than one and three-quarters square miles, is located an ice-pond dam belonging to the Oxford Golf Club.

This structure is an earthen embankment one hundred feet in length and twelve feet in height. It is in fair condition and the pond formed thereby covers about a half an acre.

JOHN WYSZATYCHI DAM NO. 1.-- Crowfoot Brook rises in Chicopee near the corner of Montgomery Street and Granby Road, so called, thence flows northwesterly and southerly a distance of three and one-half miles to the Chicopee River into which it empties. Its total drainage area is two and one-half square miles more or less.

On the headwaters of the brook seventy-five feet east of Montgomery Street, at a point where the drainage area tributary is one-quarter of a square mile, is located a dam belonging to John Wyszatycki, Montgomery Street, Willimansett, Mass.

This is an earthen embankment one hundred and fifty feet in length and about ten feet in height. The section of the structure is rather light and the spillway, or overflow, rather inadequate.

It is recommended that the spillway be increased, the dam strengthened along its downstream toe, and that the top of the structure be raised at least two and one-half feet above the crest of the spillway.

JOHN WYSZATYCHI DAM NO. 2.-- About three hundred feet north of the last described dam and fifty feet east upstream from Montgomery Street is another earthen embankment located on a very small tributary of Crowfoot Brook belonging to John Wyszatycki, Chicopee, Mass.

The dam formed an ice pond, which had been drawn down, by cutting an opening in the dam. It, therefore, need not be further considered while in this condition.

CITY OF CHICOPEE WATER WORKS DAM.-- On Crowfoot Brook about five hundred feet south of the John Wyszatycki dam No. 1, above described, and seventy-five feet west of Montgomery Street, at a point where the drainage area contributory is a little over one-quarter of a square mile, is located a dam belonging to the City of Chicopee Water Works.

The pond formed by the structure was the source, some years ago, of the water supply of Willimansett, but has not been used for that purpose for some years.

It is an earthen embankment of heavy section fifty feet in length and ten feet in height. The pond formed does not cover over one-sixth of an acre, and the waste therefrom is through a ten inch pipe laid through the dam, as there is no surface overflow or spillway. Evidently, experience has shown that none is needed. Nevertheless, for the safety of the structure, if the pond is to be maintained, a small surface overflow or swale should be built at one end of the dam in order to increase the factor of safety against flood water topping the structure. The dam is in good condition.

LAMIEUX BROTHERS DAM.-- On a very small tributary to the Chicopee River into which it empties from the north, at a point a short distance upstream from the covered highway bridge in Chicopee, at a point where the drainage area contributory is one-eighth of a square mile more or less, is a dam belonging to the Lamieux Brothers, Granby Road, Chicopee, Mass.

It is an earthen embankment one hundred and thirty-eight feet in length and about twenty-six feet in height. About twelve years ago it was constructed, and the pond formed by it, which is used as an ice pond, is about two and one-half acres in area. The waste water from the pond is conveyed through a twelve inch pipe laid through the dam. The dam is in good condition. It is recommended, however, that a surface spillway or overflow be added to the structure in order to increase its factor of safety against flood water topping it.

LAWRENCE FORTIER DAM.-- On another small tributary to the Chicopee River into which it empties from the north, at a point about five hundred feet upstream from the covered highway bridge in Chicopee, is a dam belonging to Lawrence Fortier, 11 Helen Avenue, Chicopee, Mass. This dam is located about two thousand feet upstream from the mouth of the tributary, at a point where the drainage area is less than one-quarter of a square mile.

The dam is an earthen embankment faced upstream with a concrete wall eighteen inches in thickness. It is one hundred and twenty-five feet in length, eight feet in height, thirty feet in width on top, and carries a private roadway.

The pond formed by the structure is about an acre in area and is shallow. The dam is in good condition, and the waste water from the pond is discharged through a sixteen inch pipe laid through the structure. To increase the factor of safety, however, against flood water topping the embankment, it is recommended that a small surface overflow or swale be provided.

F. X. DESMARAIS DAM.-- On another small tributary to the Chicopee River into which it empties from the north, at a point about fifteen hundred feet downstream from the iron bridge at Chicopee Falls, is a dam belonging to F. X. Desmarais, Worthington Street, Aldenville, Mass. This dam is located in Al-

denville about a half a mile upstream from the mouth of the tributary, at a point where the drainage area contributory is one-quarter of a square mile more or less.

The structure is an earthen embankment one hundred and eighty-two feet in length, nineteen feet in height, and eight feet wide on top. The ice pond formed by the structure is about an acre in area, and the waste water therefrom is taken in a pipe or culvert laid through the dam. While this pipe, so far, has been sufficient to discharge the waste from the pond, for greater safety against flood water topping the embankment, it is recommended that a surface spillway or overflow be provided.

HAMPDEN BLEACHERY DAM.-- On another tributary to the Chicopee River, into which it empties from the north at a point about seven hundred feet upstream from the iron bridge at Chicopee Falls, is a dam belonging to the Hampden Bleachery, Chicopee Falls, Mass. This structure is located about five hundred feet north of Sheridan Street between Patrick and Dewey Streets in Chicopee Falls, at a point in the brook where the drainage area contributory is about one-half a square mile.

It is an earthen embankment about two hundred and twenty-five feet in length, twelve feet in height, and faced upstream with a concrete wall one foot in thickness. Its spillway or overflow is located near its west end, is five feet in length and built of concrete. The discharge over its crest is into a concrete open channel connected to a large culvert that crosses under the street. The dam is in good condition, and the pond formed thereby covers about an acre, the water being used for washing purposes in the bleachery.

CITY OF CHICOPEE WATER WORKS DAMS.-- The dams belonging to the City of Chicopee Water Works that form reservoirs from which the water supply of Chicopee is drawn, are two in number. One of them is an earthen structure faced downstream with cut stone masonry located on Morton Brook, at a point where the drainage area is about one-third of a square mile. Its length is thirty-seven feet, height seven and one-half feet, and the pond formed thereby, one-tenth of an acre.

The other is located on Cooley Brook, and is a composite structure built of earth and concrete. It is one hundred and sixty feet in length and twelve and one-half feet in height. The drainage area of the brook at the location of the dam is four and one-half sq. miles and the pond formed covers three and one-half acres. Both dams are in good condition.

MT. TOM BREWERY DAM.-- Willimansett Brook rises in the Chicopee Plains about a mile southeast of Fairview, flows southwest three miles to the Connecticut River into which it empties, at a point a short distance upstream from the Willimansett Bridge. Its total drainage area is four and one-half square miles.

The first dam on this brook is in Willimansett, at a point three or four hundred feet from the mouth of the brook, where the drainage area contributory is practically the total drainage area of the brook, and belongs to the Mt. Tom Brewery Company.

It is an earthen embankment eighty-two feet in length, eighteen feet in height, and twenty feet in width at its top which carries a driveway. The spillway is in the center of the structure and is fifteen feet in length with its crest six feet below the top of the dam.

The dam is in good condition, and the pond formed thereby covers about three acres. On the top of the spillway some debris is collected, which should be removed.

HOLYOKE ICE COMPANY DAM.-- This structure is located about one mile upstream from the Mt. Tom Brewery dam, last described, at a point where the drainage area contributory is about three and one-half square miles and belongs to the Holyoke Ice Company.

The structure is an earthen embankment one hundred and ninety feet or thereabouts in length and twenty-seven feet in height. The slopes of the embankment are three to one on the upstream side and two to one on the downstream side. An overflow canal is attached to the structure approximately one hundred feet in length, located outside its southwest end and terminates in a Portland cement concrete spillway.

The dam, which was built the present year to replace the one that went out in 1922, is practically completed and should soon be ready for acceptance by the County.

LANGWALD DAM.-- Upstream about three-quarters of a mile from the Holyoke Ice Company dam, last described, in the Fairview section of Chicopee, at a point where the drainage area contributory is two and three-quarters square miles, is part of an earthen dam, which belongs to A. A. Langwald. The dam failed in 1922 and has not been rebuilt. No future inspection, therefore, of it will be necessary.

CHICOPEE RIVER DAMS.-- There are eleven dams on the Chicopee River of which six are in Chicopee, one in Springfield, one in Ludlow, two in Wilbraham and one in Palmer.

The Chicopee River is formed by the union of the Swift, Ware and Quaboag Rivers at the village of Three Rivers in the town of Palmer from which point it flows westerly, southerly, and then westerly again to the Connecticut River into which it empties at Chicopee. In its course, it forms the boundary line of Ludlow and Wilbraham, Ludlow and Springfield, and about one and one-half miles of the boundary line between Chicopee and Springfield.

The Chicopee River, from its mouth to Three Rivers, is fifteen miles in length and has a total drainage area of seven hundred and twenty-one square miles. It is the largest tributary of the Connecticut River, and is also the largest river that rises within the State of Massachusetts.

DANA S. COURTNEY COMPANY DAM.-- Ascending the river, for a distance of about one-half a mile from its mouth at Chicopee, near the covered highway bridge, where the drainage area of the river is seven hundred and eighteen square miles, is a dam belonging to the Dana S. Courtney Company, Chicopee, Mass., in whose plant bobbins and spools are made.

It is a log-crib structure five hundred and fifty feet in length and six feet in height laid on a ledge foundation in a broken line across the river. The structure is in fair condition.

AMES SWORD COMPANY DAM.-- Upstream about one thousand feet from the Dana S. Courtney dam, last described, at a point where the drainage area contributory is seven hundred and eighteen square miles, is located a dam belonging to the Ames Sword Company, Chicopee, Mass.

This is a stone spillway structure built upon a ledge foundation two hundred and eighty-two feet in length between abutments and eleven feet in height. The bulkhead, from which the penstocks are laid, is located at the south end of the structure. The dam is in good condition and kept in repair.

DWIGHT MANUFACTURING COMPANY DAM.-- About eight hundred feet upstream from the Ames Sword Company Dam at a point where the drainage area tributary is seven hundred and eighteen square miles, is located a dam belonging to the Dwight Manufacturing Company, Chicopee, Mass.

This is a masonry spillway gravity structure three hundred and fifty feet in length, fifteen feet in height, and forms a pond of thirty-eight acres. It is laid on a ledge foundation, with its ends abutting against ledge. At the south end is the bulkhead in which are installed the headgates for feeding the canal laid to the Dwight Manufacturing Company plant, some hundreds of feet below and from which the other plants between take water. The dam is of heavy section, is in good condition, and seems to be a solid piece of masonry.

JOHNSON & JOHNSON DAM NO. 1.-- The next dam upstream from the last described, is located at Chicopee Falls, just below the highway bridge that crosses the river, at a point where the drainage area tributary is seven hundred and fourteen square miles and belongs to Johnson & Johnson, Chicopee Falls, Mass.

This is a stone masonry faced spillway structure backed upstream with planking and earth, three hundred and sixty-seven feet in length and ten and one-half feet in height. Its crest is not in very good condition and needs to be repaired. The stone masonry facing needs pointing, and a leak through the structure at a point about one hundred feet from its east end should be repaired. The pondage behind the dam is not large.

JOHNSON & JOHNSON DAM NO. 2.-- Farther upstream about five hundred feet from the Johnson & Johnson dam No. 1, last described, at a point where the drainage area tributary is practically the same as that of the dam next below it, or seven hundred and fourteen⁵⁴ miles, is located the Johnson & Johnson dam No. 2, which formerly belonged to the Chicopee Manufacturing Company.

The dam is laid on a ledge foundation and is a masonry spillway gravity structure which, in 1894, replaced an old log structure. It is three hundred and ten feet in length between abutments, eight and one-half feet in height and forms a pond of eighty-two acres.

The dam itself is in good condition. There is, however, some erosion in the ledge along its toe and east abutment, which is not serious at present but should be repaired, as in time, it might become serious.

BIRCHAM BEND POWER COMPANY DAM.-- About two miles upstream from the Johnson & Johnson dam No. 2 at Bircham Bend, so called, at a point where the drainage area tributary is seven hundred and four square miles, is located a dam belonging to the Bircham Bend Power Company, 73 State Street, Springfield, Mass.

This is a stone masonry spillway structure to which was added, in 1900, a concrete apron faced with vitrified brick. The length of the structure is two hundred and twenty-one feet, and its height approximately seventeen feet. It is in fine condition, forms a pond ninety-one acres in area, and has attached thereto, a hydro-electric plant.

INDIAN ORCHARD COMPANY DAM.-- This structure is located in Indian Orchard, at a point where the drainage area tributary is six hundred and eighty-seven square miles and belongs to the Indian Orchard Company, Indian Orchard, Mass.

It is a stone masonry spillway structure built on a ledge foundation, four hundred and one feet in length and twenty-eight and one-half feet in height.

The structure is in good condition, forms a pond of eighty-five acres in area, and has attached thereto, a hydro-electric plant.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 1.-- Upstream about a mile from the Indian Orchard Company dam, at a point where the drainage area contributory is six hundred and eighty-six square miles, is located a dam belonging to the Ludlow Manufacturing Associates.

This is a masonry concrete spillway structure of the Ogee type built in 1917 or 1918. It is two hundred feet in length between abutments and twenty-three and one-half feet in height. The dam is in first-class condition, forms a pond of about ninety-five acres in area, and has attached thereto, a hydro-electric plant.

COLLINS MANUFACTURING COMPANY DAM.-- At North Wilbraham, at a point where the drainage area of the stream is six hundred and eighty-one square miles, is the Collins Manufacturing Company dam.

This is a masonry faced structure backed with earth having a horizontal apron thirty-six feet in width and five feet in height. The height of the dam is twelve feet and its length is two hundred and forty-four feet.

The dam is in fair condition although the stone facing needs pointing, and the apron some repairing in the way of planking. The pond formed by the structure covers seventy-nine acres.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 2.-- At Red Bridge about two and one-quarter miles upstream from the Collins Manufacturing Company dam, last described, at a point where the drainage area of the stream is six hundred and sixty-four square miles, is another dam belonging to the Ludlow Manufacturing Associates.

This is an earthen structure having a concrete core and paved with granite blocks up and downstream. It is three hundred and twenty feet in length and fifty-one feet in height with a berm on its downstream side. The spillway is built of masonry, Ogee in type, and is three hundred and six feet in length with its crest ten feet below the top of the dam.

The pond formed extends to the village of Three Rivers, and covers an area of one hundred and eighty-five acres. The dam is in good condition and has attached thereto, a hydro-electric plant.

OTIS COMPANY DAM.-- The last dam on the Chicopee River, is at Three Rivers where the drainage area contributory is six hundred and forty-seven square miles. It is a masonry concrete structure of the Ogee type two hundred and eleven feet in length and about thirty feet in height.

While the dam is stable, it has some erosion in places on its downstream side. The pond formed by the structure is sixty acres, and to it is attached a hydro-electric plant which furnishes energy to the company's textile mills.

EAST LONGMEADOW

There is only one dam in East Longmeadow on Pecowsic Brook. This brook rises on the northern slope of McCarthy Hill in East Longmeadow, flows westerly, following a circuitous route through the town of East Longmeadow, Springfield and Longmeadow; then through Forest Park in Springfield to the Connecticut River into which it empties about a mile downstream from the mouth of Mill River.

Pecowsic Brook is about six miles in length and has a total drainage area of six and three-quarters square miles. About three-quarters of a mile northwest of East Longmeadow Center, near where the railroad crosses the highway, at a point in the brook where the drainage area contributory is one and three-quarters square miles, is located the Smith ice-pond dam.

This dam, at present, forms no pond as it has an opening through it for the free discharge of the brook. No future inspections, therefore, of it will be necessary. Years ago there was a sawmill attached to this structure known as the Taylor Sawmill.

GRANVILLE

There are twenty-one dams and two natural ponds in Granville. One of these ponds is the headwaters of Borden Brook, one of the sources of the Springfield Water Supply, and the other is the headwaters of Pond Brook, so called. Of the dams, two are on Tillotson Brook, one on a tributary of Tillotson Brook, one on Dickinson Brook, one on a tributary of Dickinson Brook, four on Seymour Brook, two on Trumble Brook, three on Valley Brook, three on Hubbard River, one on Pond Brook, one on Borden Brook, one on a tributary of Borden Brook, and one on a tributary to the Westfield Little River.

CITY OF WESTFIELD WATER WORKS DAM.-- Tillotson Brook rises on the north slope of Bad Luck Mountain, flows east and southeast to Dickinson Brook, both brooks forming Munn Brook. It is about two and one-half miles in length and has a total drainage area of a little over six square miles.

Upstream about one thousand feet or thereabouts from its confluence with Dickinson Brook and about one and one-half miles northeast of Granville Corners, at a point where the drainage area contributory is six square miles, is a dam belonging to the City of Westfield Water Works, which forms a reservoir of about one and three-quarters acres.

This is a masonry spillway structure backed with earth one hundred and forty-seven feet in length and fifteen feet in height. The structure is in first-class condition. At a point about a mile farther upstream on Tillotson Brook where the drainage area contributory is two and one-half square miles, is part of a sawmill dam. As it forms no pond, no future inspection of it will be necessary.

On a tributary of Tillotson Brook, which rises on the southwest slope of Sweetman Mountain, so called, at a point, where the drainage area is one and one-half square miles, is the part of another sawmill dam, which, likewise, forms no pond, and therefore, no future inspection of it will be necessary.

HOWARD DICKINSON DAM.-- Dickinson Brook rises on the southeast slope of Bad Luck Mountain about one-half mile northeast of Granville Corners, flows southeasterly and northerly to Tillotson Brook, both brooks, as has already been stated, forming Munn Brook. It is two and one-half miles in length and has a total drainage of seven and one-half square miles.

Upstream about a mile from its confluence with Tillotson Brook, at a point where the drainage area contributory is six square miles, is located a dam belonging to Howard Dickinson, Granville, Mass.

This is a log and concrete spillway diversion dam one hundred feet in length and two and one-half feet in height. It practically forms no pond, and therefore, no future inspection of it will be necessary. To this structure is attached a sawmill and cidermill, both of which are going concerns.

R. B. COOLEY DAM.-- This dam is on a tributary of Dickinson Brook into which it empties, at a point about one-half mile downstream from Granville Corners and belongs to R. B. Cooley, Granville, Mass. It is located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is slightly less than a square mile.

The dam is an earthen embankment one hundred and fifty feet in length, eight feet in height, and carries a private roadway on its top, which is eight or nine feet in width. The spillway or overflow is in the center of the structure and is six feet in length over which the water falls into a culvert laid through the dam.

The dam is in good condition and should always be kept in such, as the pond formed is a large body of water which covers, probably, one hundred acres in area. The dam was built about twenty-six or twenty-seven years ago, and the pond is an artificial one, as there was no trace of a pond at this place previous to the construction of the dam.

NOBLE & COOLEY DRUM SHOP DAMS.-- Seymour Brook rises on the southeast slope of Winchell Mountain, flows southeasterly and northeasterly to Dickinson Brook into which it empties at Granville Corners. It is two and one-quarter miles in length and has a total drainage area of three and one-half square miles.

There are three small dams on Seymour Brook in close proximity to each other, belonging to the Noble & Cooley Drum Shop, Granville, Mass. They are located at Granville Corners about fifteen hundred feet upstream from the mouth of the brook, at a point where the drainage area contributory is three and one-quarter square miles.

The first of these dams is a short distance downstream from the drum shop, and is an earthen embankment which carries the highway. It is one hundred and twenty feet in length, and seven and one-half feet in height. Its spillway is twelve feet in length. The pond formed by this dam is small and is fed from the main stream through a pipe laid under the factory buildings.

The next dam is located above the drum shops. It is an earthen embankment two hundred and forty-five feet in length and seven feet in height. It has two spillways attached thereto, one on the north end eight feet in length, and one on the south end six feet in length. The pond formed by this dam is fed by water diverted through a twelve inch galvanized pipe from the main stream, and is used as a swimming pool.

The diversion dam is only a small structure one and one-half feet or thereabouts in height built across the main stream and forms no material pondage. All three structures are in good condition.

RALPH ROBERTS DAM.-- About one and one-half miles upstream from the Noble & Cooley Drum Shop dams, at a point where the drainage area tributary is about one-half a square mile, is located a sawmill dam belonging to Ralph Roberts, Granville, Mass.

It is built of earth and stone. Its length is one hundred and twenty-five feet, and its height only four feet. It turned water into a canal that connected with the mill below, which has gone out of existence years ago.

The dam is not in very good condition, but inasmuch as the pondage is practically nothing, there would be no material damage done by released water, in case of failure of the structure. No future inspection, therefore, of it is necessary.

JULIA HODGE DAM.-- Trumole Brook rises on the west slope of Bad Luck Mountain about three-quarters of a mile north of East Granville, flows southerly and easterly to Seymour Brook into which it empties about one-half mile upstream from the junction of Seymour and Dickinson Brooks. Trumole Brook is one and three-quarters miles in length and has a total drainage area of less than two square miles.

About a mile upstream from its mouth, where the drainage area tributary is one and one-quarter square miles, is located an old sawmill dam belonging to Julia Hodge. This is an earthen structure one hundred and twenty-five feet in length and of considerable height faced with heavy dry stone-work on its downstream side. The center of the dam has gone out, making a free waterway for the brook; and therefore, no future inspection will be necessary.

JOHN DEJANO DAM.-- About one-half mile upstream from the Julia Hodge dam, last described, at a point where the drainage area is about one-third of a square mile, is located an ice-pond dam belonging to John Degano, East Granville, Mass.

The dam is an earthen embankment one hundred feet in length and seven feet in height. It is a substantial structure, as it carries the highway on its top, or in other words, the highway is the dam through which a culvert, two feet wide and four feet deep, is laid from the spillway to discharge the waste water of the pond. The pond covers about an acre in area.

A. R. HOLCOMB DAM NO. 1.-- Valley Brook rises in the northern part of the town of Granville, one and one-half miles west of Sweetman Mountain, and three miles northwest of East Granville. It flows south through the town of Granville across the Massachusetts-Connecticut boundary line, thence to the east branch of the Farmington River. It is six miles in length and has a total drainage area of eight and one-half square miles.

About one and one-half miles from its mouth or one-half of a mile upstream from the Massachusetts-Connecticut boundary line, at a point in the brook where the drainage area tributary is six square miles, is located an old sawmill dam belonging to A. R. Holcomb, Granby, Connecticut.

Since part of this structure has gone out, making a free waterway for the brook, no future inspection of it will be necessary.

A. R. HOLCOMB DAM NO. 2.-- Upstream about fifteen hundred feet from the Holcomb dam No. 1, last mentioned, is located another sawmill dam belonging to A. R. Holcomb, Granby, Conn.

This structure forms no pond because of an opening through it, and therefore, no future inspection of it will be necessary.

GEORGE STUART DAM.-- About two and one-quarter miles upstream from the Holcomb dams, last described, in Twining Hollow, so called, at a point where the drainage area contributory is two and one-half square miles, is located an old sawmill dam belonging to George Stuart, Granville, Mass. The greater part of this structure has gone out, and therefore, no future inspection of it will be necessary.

F. THOMPSON DAM.-- Hubbard River rises on the south slope of Barnes Mountain in Tolland, flows southeasterly through Granville to Pond Brook, both forming the east branch of the Farmington River. Hubbard River is six miles in length and has a total drainage area of fourteen and three-quarters square miles.

At a point, a short distance below its junction with Pond Brook, where the drainage area contributory is twenty square miles, was a sawmill dam belonging to F. Thompson, Granville, Mass. The sawmill has gone out of existence long ago, and only traces of the structure remain. Therefore, no future inspection of it will be necessary.

Two thousand feet farther upstream, at a point where the drainage area contributory is fourteen and three-quarters square miles, was another old sawmill dam of which not much more than the trace is left, and therefore, no future inspection of it will be necessary.

Still farther upstream, a distance of one and one-half miles from the last dam mentioned, at a point where the drainage area is twelve square miles, was a turning and sawing factory dam owned and operated by J. M. Johnson some fifty years ago. The factory was at this time a busy little establishment, though it or the dam does not exist at the present time, since only traces of both are left. The privilege and land around are now within the boundaries of the Granville State Forest.

NELSON FRISBEE DAM.-- Pond Brook rises in Parsons Pond, which is situated about two miles northwest of West Granville, flows southwesterly and southerly to Hubbard River with which it joins to form, as has been stated above, the east branch of the Farmington River. Pond Brook is three and one-half miles in length and has a total drainage area of five and one-quarter square miles.

In West Granville, at a point on the brook where the drainage area contributory is one and one-half square miles, is located a dam belonging to Nelson Frisbee, West Granville, Mass.

It is a dry stone masonry structure backed with earth eighty-five feet in length and eight feet in height. It forms no pond, as part of the structure is gone out and, therefore, no future inspection of it is necessary. A tannery was attached to this dam operated by Elisha Marks but went out of existence many years ago.

CITY OF SPRINGFIELD WATER WORKS DAM.-- On Borden Brook, a short distance above the southwest corner of the Borden Reservoir, at a point where the drainage area contributory is about four square miles, is part of an old sawmill dam which was purchased by the City of Springfield Water Works for the protection of its water shed. No future inspection of it will be necessary.

C. PHELON DAM.-- On a tributary of Borden Brook from the south, at a point about one-half mile up from its mouth on practically the Blanford-Granville boundary line where the drainage area is about one-half a square mile, is an old sawmill dam eighty feet in length and ten feet in height. It forms no pond as part of the structure is gone out, and, therefore, no future inspection will be necessary.

STOWS POND DAM.-- On a small tributary of the Westfield Little River into which it empties from the south about one-half a mile downstream from the mouth of Borden Brook, is located, at a point three-quarters of a mile from the mouth of the tributary where the drainage area contributory is one and three-quarters square miles, Stows Pond Dam.

The greater part of this structure has gone out, and the pond no longer exists, hence, no future inspection will be necessary of it.

NATURAL PONDS.-- There are two natural ponds in Granville. One is Parsons Pond, which is the headwaters of Pond Brook and located about one and three-quarters miles northwest of West Granville. The pond has a surface area of twelve acres and a drainage area of one-third of a square mile.

The other is Black Pond, which is the headwaters of Borden Brook and located about two and one-half miles northeast of West Granville. Black Pond has a surface area of twenty-eight acres and a drainage area of one-quarter of a square mile. No dam has been constructed across the outlets of either of these ponds.

HAMPDEN

There are fifteen dams in Hampden, six of which are located on Scantic Brook, seven on tributaries of Scantic Brook, and two on a tributary of the south branch of Mill River.

Scantic Brook rises in the northern part of the town of Stafford, Connecticut, flows northwesterly to Hampden Center, Mass., thence westerly and southerly to North Somers, Connecticut, where it joins the Whatchaug Brook, both brooks forming the Scantic River which is a tributary of the Connecticut River. The total drainage area of Scantic Brook is thirty-one and one-half square miles, and its length is eleven miles, of which eight are in the town of Hampden.

MRS. ANNA CARMODY DAM.-- The first dam on Scantic Brook in Massachusetts is in the town of Hampden and belongs to Mrs. Anna Carmody, East Longmeadow, Mass. It is located about a mile upstream from the state line, at a point where the drainage area contributory is twenty-four and one-half square miles.

The dam is an earthen embankment one hundred and five feet in length and twenty-two feet in height. To the dam is attached a saw and gristmill. The latter has not been operated for years and the former, for the past few years, has been operated only intermittently. Previous to the saw and gristmill, the establishment attached to the dam was a woolen mill, but this went out of existence forty-five or fifty years ago.

The overflow is through a canal over the natural ground one hundred feet away from the north end of the dam. The spillway at the head of this canal, over which the water flows, is in poor condition and should be repaired. The dam also requires repairing, especially a leak under the four foot penstock laid through the dam to the wheel. The mill was formerly known as the Tuttle and Kibbe Mill.

JOHN KENWORTHY DAM.-- About a mile upstream from the Jarmody dam, last described, and about one-third of a mile east of Scantic, at a point where the drainage area contributory is about twenty-three and one-half square miles, is part of a dam which was known as the Leonard Mill dam and belongs to John Kenworthy, Hampden, Mass. As no pond is now formed by the structure, no future inspection of it will be necessary. A blanket mill was attached to the structure but the establishment shut down about twenty years ago.

H. EARL KIMBALL DAM.-- This structure is about one-third of a mile upstream from the so called Leonard Mill dam, last described, and practically located within Hampden Center, at a point on the stream where the drainage area contributory is about twenty-three and one-quarter square miles. It belongs to H. Earl Kimball, 142 Angel Street, Providence, Rhode Island. The dam was built for the purpose of developing power for a woolen mill attached thereto, and was in operation until 1915, when the mill was burned down and not rebuilt.

The dam, in plan, is curved upstream and is a spillway masonry structure backed with gravel. Its length is one hundred and eighty feet and its height eighteen feet. A canal was laid from its west end to the woolen mill below.

The pond formed by the dam backs up for a considerable distance, but is narrow and does not cover more than a few acres. The dam is a stable structure in fair condition. The west end abutment, between the west end of the spillway and canal, shows some leakage along its ledge foundation. There are some trees growing on the face of the masonry of this abutment, and it is recommended that these be cut down and all leakage through the structure repaired.

LINCOLN MCCRAY DAM NO. 1.-- Upstream about one-half a mile from the H. Earl Kimball dam, last described, and in Hampden Center where the drainage area of the brook is about twenty-three square miles, is a dam belonging to Lincoln McCray, Hampden, Mass.

To this dam was also attached a woolen mill, which was burned down about thirty-three years ago and was not rebuilt. The plant was then known as the Lacowsic Woolen Company Mill. The dam was a wooden spillway structure laid between masonry abutments, but, inasmuch as there is only a trace of it now left, no future inspection of it will be necessary.

LINCOLN MCCRAY DAM NO. 2.-- About one-half of a mile farther upstream from the McCray dam No. 1, at a point, where the drainage area contributory is twenty and three-quarters square miles is another dam belonging to Lincoln McCray. It is a stone spillway structure backed with gravel. The length of the spillway between abutments is seventy-six feet and height eight feet.

The pond formed by the dam is small and practically filled with silt so that in case of failure of the structure, no material damage would be done by released water because of the very small pondage. If the dam is to be maintained, however, all leakage should be repaired and the structure put in good condition.

W. B. WESSON ESTATE DAM.-- About two miles upstream at a point where the drainage area is seven and one-half square miles, is a dam belonging to the W. B. Wesson Estate, or to Mrs. C. K. Rockwell, Hampden, Mass., or Belrose Lane, Radnor, Philadelphia.

It is a masonry spillway structure with the downstream face dry masonry and the upstream face plastered and reenforced with concrete. The structure is one hundred and thirty-four feet in length of which one hundred and fourteen feet is the spillway, and sixteen feet in height. It is rather light in section with its top only two and one-half feet wide.

The bulkhead at the west end is twenty feet in length in which is installed a gate for drawing down and emptying the pond. This dam was an old structure overhauled and increased in height. The pond formed by the dam covers about two acres and is used as a pleasure pond although formerly it was a sawmill pond. At or through the bulkhead, at the west end of the structure, there is some leakage and this, it is recommended, should be repaired.

MRS. MARGARET DRISCOLL DAM.-- Two of the seven dams that are on tributaries of Scantic Brook are on a tributary that rises in the southwest part of Hampden and flows west and south to the Scantic Brook into which it empties at a point in Connecticut just below the Massachusetts-Connecticut state line. It is about one and one-half miles in length and has a total drainage area of about one square mile.

Ascending the stream from the Massachusetts-Connecticut state line, the first dam on this tributary is located on the edge of the highway leading from Scantic to North Somers at a point about a mile south of Scantic where the drainage area contributory is a little less than one-half square mile and belongs to Mrs. Margaret Driscoll, Ludlow, Mass. R. F. D. No. 2.

The dam lies close to the highway, is ninety feet in length, eight feet wide on top, six and one-half feet in height, and forms an ice pond of about an acre in area. It has an ample spillway and the structure is in fair condition.

WINTHROP KIERRE DAM.-- This dam is located about one thousand feet above the dam last described, at a point where the drainage area is only about one-quarter of a square mile. It is an earthen embankment one hundred and eighty-six feet in length, six and one-half feet in width on top, and six feet in height. The dam is in fair condition and forms an ice and fishing pond about four acres in area.

R. S. SMITH DAM.-- Two more of the seven dams that are on tributaries of Scantic Brook are on a tributary which rises on the west slope of Pine Mountain and flows directly north to Scantic Brook into which it empties at Hampden Center. It is about one and one-half miles in length and has a total drainage area of about one square mile.

The first dam on this tributary above its mouth belongs to R. S. Smith, Hampden, Mass. The structure abuts the west side of the South Road, so called, at a point about a mile south of Hampden Center where the drainage area contributory is about one-half square mile. The dam is a concrete reenforced wall six or eight inches in thickness backed with earth and six feet in height. Inasmuch as the pond formed by the structure is very small and filled with silt, no future inspection of it will be necessary.

N. S. KIBBE DAM.-- The other dam on the same tributary belongs to N. S. Kibbe, Hampden, Mass. It is located about one-third of a mile upstream from the R. S. Smith dam, last described, on the west side of the highway at a point where the drainage area tributary is about one-quarter of a square mile. This structure is now a derelict with a free water way for the brook, and no future inspection of it will be necessary.

SIMON S. HUNT HEIRS DAM.-- The fifth of the seven dams on tributaries of Scantic Brook is on East Brook which rises in the southeast corner of Wilbraham and flows southerly through Hampden to Scantic Brook into which it empties about one-third of a mile east of Hampden Center.

The brook is about three and one-half miles long and has a total drainage area of three square miles. The dam on this tributary is owned now by the Simon S. Hunt heirs, but looked after by Harry Goodwell, Hampden, Mass., and is located about two-thirds of a mile from the mouth of the brook at a point where its drainage area is about two and three-quarters square miles.

It is an earthen embankment faced up and downstream with dry stone masonry one hundred and seventy feet in length, eleven feet in height, and twenty feet wide on its top. The spillway or overflow is outside the dam, and west of its west end.

The pond formed covers about two and one-half acres. Years ago there was a sawmill attached, but now the pond is used for fishing purposes. The dam is more or less abandoned and leaks considerably, and the overflow is in a tumbledown condition. If the structure is to be maintained, the leakage should be stopped and the overflow repaired. Likewise, the trees which are growing on the edge of the dam on the downstream side should be cut down. If the structure is to be abandoned, the pond should be drawn down.

EMERSON GAYLORD DAM.-- The sixth dam on a tributary of Scantic Brook, is on a tributary of Big Brook which in turn is a tributary of Scantic Brook. This tributary rises on the north slope of Mount Vision, and flows southeasterly to Big Brook into which it empties about one and one-half miles above the confluence of Big and Scantic Brooks.

It is only about one-third of a mile long and has a total drainage area of only one-quarter of a square mile. The dam is located near the headwaters, at a point where the drainage area is not over one-tenth of a square mile and belongs to Emerson Gaylord, Chicopee, Mass.

This is an earthen structure with concrete facing one hundred and ten feet in length and nine feet in height. An adequate concrete spillway is built in the center of the dam. The pond formed covers about one-quarter of an acre and is used as a pleasure and ice pond. The structure is in good condition.

F. W. FULLER DAM.-- The last of the seven dams on tributaries of the Scantic Brook is on West Brook. This brook rises on the west slope of Mount Vision and flows southerly to Scantic Brook into which it empties at Hampden Center. It is about one and three-quarters miles in length and has a total drainage area of a little less than one square mile. The dam is located about a mile upstream from its mouth or a mile north of Hampden Center, at a point where the drainage area tributary is a little less than one-half of a square mile and belongs to F. W. Fuller, Springfield, Mass.

It is an earthen embankment one hundred and ten feet in length and eight feet in height faced upstream with a concrete wall about one foot in thickness. It is in good condition and the pond formed thereby, not over one-quarter of an acre in area, is used as a pleasure pond.

F. T. KELLOGG DAMS.-- These two dams are the ones above mentioned that are on a tributary of the south branch of Mill River. This tributary rises on the west slope of the Wilbraham Mountains about a mile north of Hampden Center and flows westerly and northerly to the south branch of Mill River into which it empties at a point in Wilbraham about a mile upstream from where the south branch of Mill River intersects the East Longmeadow-Wilbraham boundary line.

Its length is two miles and its total drainage area one and one-quarter square miles. These two dams belong to F. T. Kellogg, 123 Maple Street, Springfield, Mass. The two structures are in close proximity to each other and are located about one and one-half miles north of Scantic, about fifteen hundred feet east of the highway leading from Scantic to Wilbraham, where the drainage area contributory is less than one-quarter of a square mile.

The lower of the two is a concrete structure one hundred and forty feet in length and eighteen feet in height. It is in good condition and forms a small reservoir not over one-eighth of an acre which is used as a water supply for the farm. The other dam which is three hundred feet upstream is a masonry structure sixty-four feet in length and about nine feet in height. It forms a very small reservoir and is in good condition.

HOLLAND

There are seven dams and two natural ponds in the town of Holland. Two of these dams are on Holland Brook, a tributary of the Quinebaug River, one on a tributary of Holland Brook, three on Stevens Brook, and one on a tributary of Stevens Brook.

E. WARREN ALEXANDER DAM.-- Holland Brook rises in the town of Union, Connecticut, flows northwest into Holland and then north through Holland into Brimfield in which place it joins Mill Brook to form the Quinebaug River. Holland Brook is about eight miles in length and has a total drainage area of about twenty-six square miles.

Upstream about one and one-half miles from its mouth or one-half mile from Holland Pond, so called, at a point where the drainage area contributory is twenty-three and one-half square miles, is located a dam belonging to E. Warren Alexander, Worcester, Mass.

To this structure, which was an earthen embankment faced with dry stone masonry, were attached a saw and grist mill. Both mills have been abandoned for thirty years and only traces of their foundations remain. Likewise only traces of the dam remain, and therefore, no future inspection of it will be necessary.

HAMILTON WOOLEN COMPANY DAM.-- About one-half a mile upstream from the Warren Alexander dam and one-half mile northeast of Holland Center, at a point about seventy feet south of the highway where the drainage area contributory is twenty-one and three-quarters square miles, is located a dam belonging to the Hamilton Woolen Company, Southbridge, Mass.

It is a dry stone masonry structure of heavy section backed with earth one hundred and seventy-six feet in length and thirty feet in height laid on a ledge foundation. The spillway is fifty-three feet in length with its crest three feet below the top of the dam.

The dam forms a storage reservoir for the Hamilton Woolen Mills downstream and has a sluice way through its center in which are installed gates for regulating the height of the reservoir. The dam, as far as could be learned, was built in the sixties and is in good condition. Apparently, from its appearance, it is carefully looked after, and this is as it should be, considering the large body of water behind it which covers about four hundred and forty-five acres and is known as the Hamilton Reservoir.

CORA WELLS DAM.-- On a tributary to Holland Brook into which it empties from the west, at the south end of the Hamilton Reservoir, is a dam belonging to Cora Wells, Holland, Mass. This structure is located about fifteen hundred feet from the mouth of the tributary, at a point where the drainage area contributory is five and three-quarters square miles.

It is a gravity dry stone masonry structure to which a sawmill was attached. Only traces, however, of the foundation of the mill now remain, and since an opening has been cut through the dam, making a free passage way for the brook, no future inspection of it will be necessary.

OLIVER HOWLETT DAM.-- Stevens Brook rises just across the Massachusetts-Connecticut boundary line in the northeast corner of the town of Stafford, Connecticut, flows northeast into and across the corner of the town of Wales, and through the town of Holland to Holland Brook into which it empties about one-half of a mile upstream from the Hamilton Woolen Company dam. Stevens Brook is four miles in length and has a total drainage area of about four and one-half square miles.

On this brook about two thousand feet upstream from its mouth, at a point where the drainage area contributory is four and one-third square miles, is located a dam belonging to Oliver Howlett, Holland, Mass. Inasmuch as the dam is a derelict, having a free water way through it, no future inspection of it will be necessary.

DWIGHT E. BUTTERWORTH DAMS.-- About a mile upstream from the Oliver Howlett dam, last described, at a point in the brook where the drainage area contributory is three square miles, is a dam belonging to Dwight E. Butterworth, Holland, R. F. D., Southbridge, Mass. To this structure was attached an establishment for making wicks for lamps which was abandoned about one-half a century ago, and only a part of the dam remains that offers no obstruction to the flow of the brook. For this reason, no future inspection of it will be necessary.

At a point three hundred feet upstream from the last described dam is another dam belonging to the said Dwight E. Butterworth. It is an earthen embankment faced downstream with stone-work one hundred and ten feet in length and twelve feet in height. A sawmill was attached to the structure which stopped operating for good in 1914. The dam, which is now a derelict, forms no pondage, and, therefore, no future inspection of it will be necessary.

G. H. WING DAM.-- This is located on a very small tributary of Stevens Brook into which it empties from the north near the Holland-Wales boundary line and belongs to G. H. Wing, Holland, Mass. The location of the structure is about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is only about one-tenth of a square mile.

The structure is an earthen embankment faced downstream with dry stone masonry one hundred and fifty feet in length and five feet in height. The spillway or overflow is a swale running across the top of the embankment at a point about thirty-five feet from the east end of the structure. The embankment is nine feet wide on its top and is of heavy section. The dam is in good condition. It would be advisable, however, to pave the swale with stone so as to prevent erosion from overflowing water in time of flood flows.

NATURAL PONDS.-- There are two natural ponds in Holland. One is the Holland Pond, which is situated about one mile north of Holland Center on Holland Brook. It is a large body of water which covers sixty-eight acres and has a drainage area contributory of twenty-five square miles.

The other is Lost Pond, situated about two miles southwest of Holland Center. This is a small natural body of water not over a couple of acres in area and with a drainage contributory of only one-tenth of a square mile. There are no dams across the outlets of these two ponds.

HOLYOKE

In Holyoke there are fourteen dams, one of which is on the Connecticut River, six on Black, Tannery, and Whiting Street Brooks, which are the municipal storage and intake dams of the City of Holyoke Water Works, two on Tannery Brook downstream from the municipal dam on that brook, two on City Farm Brook, one on a tributary to City Farm Brook, and two on Trout Brook.

HOLYOKE WATER POWER COMPANY DAM.-- The Connecticut River rises in the Connecticut Lakes in Northern New Hampshire, and flows southerly between New Hampshire and Vermont, across Massachusetts and Connecticut into Long Island Sound. It is three hundred and forty-five miles in length and has a total drainage area of eleven thousand, three hundred and forty-five square miles one hundred and five of which are in Canada.

The river forms a part of the boundary line between Hampden and Hampshire Counties, being the boundary line between the City of Holyoke in the one and the town of South Hadley in the other. At the top of the rapids between Holyoke and the village of South Hadley Falls, just above the angle in the stream where the drainage area contributory is 8180 square miles, is located the Holyoke dam, so called, built by the Holyoke Water Power Company.

This is a gravity stone masonry spillway structure of the Ogee type one thousand and twenty feet in length, and thirty feet in height. It is built on a ledge foundation and on top of this ledge along its toe is laid a horizontal rubble masonry apron covered with concrete to protect the toe from being undermined by erosion.

The fall developed by the dam and rapids is about sixty feet. To the dam is attached a system of canals along the banks of which are located the industrial establishments of the City of Holyoke which are served by the power developed by the dam and canals; the wheel installation being in the neighborhood of fifty thousand horse-power.

The construction of the dam was started in 1892 and finished in 1896. With flashboards two and one-half feet in height on the dam, the pond formed backs up water above Northampton to the town of Hatfield and covers about two thousand two hundred and fifty acres. Without flashboards, the pond formed, when on a level with the crest of the dam, covers about fifteen hundred acres. The dam is in good condition and is under the constant supervision of the engineering department of the Holyoke Water Power Company.

HOLYOKE WATER WORKS DAMS.-- The City of Holyoke has erected and maintains six dams within the limits of the City of Holyoke. One of these is across the outlet of Ashley Reservoir in which Black Brook, or as it is sometimes called, Bear Hole Brook, rises. This is an earthen embankment two hundred and fifty feet in length and nine feet in height. It has two spillways, one nine feet, and the other eighteen feet in length, over which the waste water discharges into Black Brook and flows southerly into West Springfield to the Westfield River.

Ashley Reservoir is a natural pond which was raised by the dam thrown across its outlet. It is located in the southwestern part of the city near the West Springfield town line, and was taken as a water supply in 1872. The surface area of the reservoir is two hundred and eighty-six acres, its drainage area three square miles, and its capacity about fifteen hundred millions of gallons.

The Bray Reservoir dam built in 1890 on the Bray Brook, a tributary of Ashley Reservoir, is an earthen structure one hundred and sixty-five feet in length, twenty-five feet in height, and twelve feet wide on its top. It is located about two hundred feet from the western bank of the Ashley Reservoir, has a drainage area of eight-tenths of a square mile, a surface area of fifteen acres, and a capacity of sixty millions of gallons.

The High Service Reservoir dam was completed in 1904 and is built on another tributary, emptying into Ashley Reservoir towards its west end. The dam is located about one thousand feet upstream from the mouth of the tributary where the elevation of the ground is one hundred and eight feet higher than Ashley Reservoir, at a point where the drainage area is about one-half a square mile.

The dam is an earthen embankment seven hundred and thirty-five feet in length, thirty-three feet in height, and twenty-five feet wide on its top. Besides the dam proper, there extends from its west end an earthen dike nine hundred feet in length and fourteen feet in height. The spillway of the dam is ten feet in length and discharges the waste water over solid ledge into a channel connected with the old bed of the brook below the toe of the structure. The surface area of the reservoir is sixty-one acres, and its capacity is 354 millions of gallons.

Tannery Brook, which lies in close proximity to Ashley Reservoir but is not a tributary thereto, rises in the City of Holyoke on the east slope of Sheldon Hill, flows southeasterly to a point near the Holyoke-West Springfield boundary line, thence in Holyoke along the Holyoke-West Springfield boundary line to the Connecticut River. It is three and one-quarter miles in length and has a total drainage area of two and one-half square miles.

At a point where the highway leading from the City of Holyoke to the City of Westfield crosses the Brook, where the drainage area is a little over a half a square mile, is located Tannery Reservoir. The dam is one hundred and fifty feet in length and about nine feet in height. It forms the

highway at this point in which the spillway is located. The spillway is built on the upstream side of the highway and connects with a pipe or culvert laid through the highway. The surface area of the reservoir is about six acres and its capacity two millions of gallons.

There are two dams located in close proximity to each other on Whiting Street Brook in the northerly part of the City of Holyoke, at the foot of Mount Tom. Whiting Street Brook rises on the easterly slope of Mount Tom, flows southeasterly to the Connecticut River into which it empties, at a point two miles upstream from the Holyoke dam, described above, and two miles downstream from Smith Ferry, so called. It is about two miles in length and has a total drainage area of about two square miles.

About one-half mile upstream from its mouth, where the drainage area is one and one-half square miles, is located the Whiting Street lower reservoir dam built in 1884. It is a masonry structure one hundred and forty-one feet in length and fifteen feet in height. Its spillway is twelve feet in length and the area of the reservoir formed by the structure is only an acre. This reservoir is known as the Whiting Street Intake, from which the water is taken in a pipe to the consumers.

About six hundred feet upstream from the intake, last described, is the second dam which forms the Whiting Street Storage Reservoir. It is a masonry structure built in 1883 and 1889 of rough sandstone. Its length is seventeen hundred and seventy-three feet, and its height is twenty-two feet in length and is located on the extreme southerly end of the structure. Its drainage area is about one and one-half square miles, surface area one hundred and fourteen acres and capacity 480 millions of gallons.

All these dams, as described, are in good condition and under the constant supervision of the officers of the City of Holyoke Water Works Department.

COTE ESTATE DAM.-- On Tannery Brook (described with City of Holyoke Water Works dams in connection with Tannery Reservoir), at a point about a mile upstream from its mouth where the drainage area tributary is one and one-third square miles, is a dam belonging to the Cote Estate.

It is an earthen embankment two hundred and forty feet in length, ten feet in height and eight feet wide on its top. The spillway or overflow is one hundred feet from its north end and is built of concrete. It is seven feet in length with its crest two and one-half feet below the top of the embankment. The pond formed by the dam is two and one-half acres and is used as an ice pond. The dam is in fair condition.

EGER BROTHERS DAM.-- Upstream about fifteen hundred feet from the Cote dam, in close proximity to the Holyoke and Westfield railroad, at a point where the drainage area tributary is one and one-quarter square miles, is a dam belonging to the Eger Brothers, Lower Westfield Road, Holyoke, Mass.

It is an earthen embankment one hundred and ten feet in length, and five feet in height. The overflow is a concrete wall about ten feet in length. The pond formed covers about one-third of an acre, and is a shallow body of water, used as an ice pond. The dam is in fair condition. In case, however, of its failure, because of the small capacity of the pond, no material damage would be done by the released water.

V. CARPENTIER DAM.-- City Farm Brook is a tributary of Tannery Brook, rises in the same locality as the latter, flows nearly parallel and empties into Tannery Brook near the New York, New Haven and Hartford railroad in the southern part of the city. City Farm Brook is about two miles in length and has a total drainage area of a little less than a square mile.

About two thousand feet up from its mouth on the north side of Lower Westfield Road, at a point where the drainage area is three-quarters of a square mile, is a dam belonging to V. Carpentier, Lower Westfield Road, Holyoke, Route 1. It is an earthen embankment three hundred and fifty feet in length and seven feet in height with its downstream face perpendicular and kept in place by railroad ties.

The overflow is located one hundred feet south from the north end of the structure and is a concrete wall one foot in thickness, built in the upstream slope of the structure and from which an overflow channel extends below the toe of the dam. The area of the pond formed is about two acres and is used as an ice pond. The dam is in fair condition.

FRANK G. BRAY DAM.-- The second and last dam on City Farm Brook is located on the northwesterly side of the Westfield Road, so called, about fifteen hundred feet southerly from Hitchcock Street, at a point where the drainage area contributory is somewhat less than a quarter of a square mile, and belongs to Frank G. Bray, Westfield Road, Holyoke, Mass.

It is an earthen embankment built along the highway two hundred and fifty-five feet in length and six feet in height. There are two spillways in the structure which are swales that discharge into separate wells, built on the downstream side of the embankment.

From each well is laid, under the highway, an eighteen inch drain pipe. The pond is very small, being, in part, excavation and used as an ice pond. The top of the dam is about four feet higher than the highway. The structure is in fair condition.

DWIGHT R. BRAY DAM.-- This structure is located near the southeasterly side of the Westfield Road about fifteen hundred feet southerly from Hitchcock Street on a tributary to Tannery Brook, at a point where the drainage area contributory is only one-tenth of a square mile and belongs to Dwight R. Bray, Westfield Road, Holyoke, Mass.

It is an earthen embankment two hundred and forty-four feet in length and six feet in height. Its overflow is located at its south end. The structure formed a pond of about an acre in area. For some years, however, the pond has not been used for the cutting of ice, and has been drawn down. No future inspection, therefore, of it will be necessary.

P. J. KENNEDY DAM.-- Trout Brook rises in Holyoke about one-half mile north of Whiting Street Reservoir and flows northeast a distance of about two miles to the Connecticut River into which it empties about a mile upstream from Smith Ferry. Its total drainage area is two square miles.

About two thousand feet from its mouth, at a point where the drainage area contributory is a little more than one and three-quarters square miles, is a dam belonging to P. J. Kennedy. This is a masonry structure backed upstream with earth one hundred and ten feet in length and twenty feet in height.

The overflow is at the north end of the structure and is twenty-five feet in length with its crest two feet below the top of the dam. The structure is laid on rock ledge which is the top of a cascade. Through the overflow, an opening has been made ten feet, or thereabouts, in width which has lowered the pond. For this reason, no future inspection of the structure will be necessary.

STATE RESERVATION DAM (BRAY LAKE.)-- About one-half mile upstream from the Kennedy dam, last described, and three-quarters of a mile northwest of Smith Ferry, at a point where the drainage area contributory is one and one-half square miles, is a dam on the State Reservation which forms Bray Lake.

This structure is an earthen embankment four hundred and sixty feet in length and nine feet in height. Its top is eighteen feet in width and used as a roadway. The overflow, which is located one hundred and thirty-two feet from the north end of the dam, is twelve feet in length, and its crest five feet below the top of the embankment.

The retaining walls of the overflow are in poor condition, being cracked, and with the north wall falling in. It is recommended that these retaining walls be repaired.

LONGMEADOW.

There are two dams in Longmeadow, one on Wheel Meadow Brook, and the other on Long Meadow Brook.

H. L. HANDY DAM.-- Wheel Meadow Brook rises about one-half mile East of Longmeadow Street in Longmeadow Center, and flows west to the Connecticut River into which it empties about a mile downstream from the Longmeadow-Springfield boundary line. It is one and one-half miles in length and has a total drainage area of three-quarters of a square mile.

About a mile from its mouth and five hundred feet east of Longmeadow Street, at a point where the drainage area contributory is one-half square mile is located a dam belonging to H. L. Handy, Springfield, Mass. It is an earthen embankment one hundred feet in length, thirteen feet in height, and ten feet in width on its top.

The pond formed is about one and one-half acres and is used as a pleasure and ice pond. The spillway is a brick well to which is connected a circular two foot brick culvert laid through the dam. The dam is in good condition. There is some debris, however, such as roots and leaves collected in the well and culvert that should be removed.

CLUB REALTY COMPANY DAM.-- Longmeadow Brook rises near the Longmeadow-East Longmeadow boundary line and flows west to the Connecticut River into which it empties about a mile upstream from the Massachusetts-Connecticut boundary line. It is four miles in length and has a total drainage area of four square miles.

About two miles upstream from its mouth and a mile southeast of Longmeadow Center, at a point where the drainage area contributory is three square miles, more or less, is located a dam belonging to the Club Realty Company, Springfield, Mass.

It is an earthen embankment one hundred and sixty feet in length, nineteen feet in height and ten feet in width on top. The overflow or spillway is located at the north end of the dam and is ten feet in length with its crest five feet below the top of the dam. It discharges into a channel connected with the bed of the brook downstream from the toe of the structure. The spillway and upper stretch of the channel is built of concrete. The dam was rebuilt in part some two years ago and is in good condition.

LUDLOW

There are eight dams and seven natural ponds in Ludlow. Of the dams, one is on the Chicopee River, namely that belonging to the Ludlow Manufacturing Associates and is described under Chicopee, two are on Higher Brook, one on a tributary to Higher Brook, two on Broad Brook, one on a tributary to Broad Brook and one on Stony Brook.

M. BURELLE DAM.-- Higher Brook rises on the south slope of Facing Hills, flows southerly, northwesterly, southwesterly and southerly to the Chicopee River into which it empties about a mile downstream from the Ludlow-Chicopee boundary line. It is nine miles in length and has a total drainage area of eleven and one-third square miles.

About two miles upstream from its mouth in the southwest corner of Ludlow, at a point where the drainage area contributory is ten and one-quarter square miles, is located a dam belonging to M. Burelle, Ludlow, Mass. It is an earthen embankment faced downstream with dry stone masonry one hundred feet in length and about ten feet in height.

The spillway is in the center of the structure and has a sloped wood plank apron. The retaining walls of the spillway are formed of planking to which the earth is backed up. This planking has rotted out considerably, and the embankment behind it has been washed out.

The dam seems to be an abandoned structure and not in use for some time. It is in very poor condition and badly in need of repairs. It is, therefore, recommended that the structure be repaired or the pond, which covers an area of five or six acres, be drawn down by lowering the spillway or making an opening through the dam sufficient to make a free waterway for the flow of the brook.

SAMUEL RADNER DAM.-- About a mile upstream from the Burell dam, last described, at a point where the drainage area contributory is eight and one-third square miles, is located a dam belonging to Samuel Radner, 216 North Main Street, Springfield, Mass. This structure is an earthen embankment one hundred and fifty-six feet in length, ten feet in height, and thirty feet wide on top.

It is faced upstream in part, with a concrete wall one foot in thickness and down stream with dry stone work. The spillway is twenty-four feet in length and is located within fifteen feet of the west end of the structure with its crest about one and one-half feet below the top of the dam. The dam is in fair condition. Nevertheless, it is recommended that its top be raised another foot and a half, thus making it three feet above the crest of the spillway in order to increase its factor of safety against water topping it in time of flood flow.

It is also recommended that the trees growing in and at the toe of the structure be cut down. The pond formed is about ten acres. To the structure was attached a sawmill and sash and plane factory. The establishment was burned down a year or so ago, and has not been rebuilt. It belonged to John Hoyte and was known as the Harris Mill.

ALVA L. CLARK DAM.-- On a tributary of Higher Brook into which it empties from the east about one thousand feet downstream from Ludlow, is located a dam belonging to Alva L. Clark, Ludlow, Mass., and which formerly belonged to Warren D. Fuller. It is an earthen embankment eighty-five feet in length and twelve feet in height faced downstream with dry stone masonry. Its drainage area is a half a square mile.

The pond formed by the structure is about one and one-half acres and is a shallow body of water. To the structure is attached a sawmill which was operated until three or four years ago, when the mill was abandoned. The dam, apparently, is also abandoned. It is in fair condition, however, but should it fail for want of repairs in the future, because of the very small shallow pond behind it, no material damage, it seems, would be done by the released water.

It is advisable, however, in case the dam is no longer going to be used, that a free passage way for the water be made through it, and pond drawn down.

ALDEN BROTHERS DAM.-- Broad Brook rises one and one-half miles south of Belchertown Center, flows southerly through Belchertown to Ludlow and through Ludlow into the Chicopee River into which it empties about fifteen hundred feet west of the Belchertown-Ludlow boundary line. It is six miles in length and has a total drainage area of eleven and one-half square miles.

About a mile from its mouth and two and one-half miles east of Ludlow Center, at a point where the drainage area contributory is ten and three-quarters square miles, is a dam belonging to Alden Brothers, Ludlow, Mass. This is an earthen embankment faced downstream with dry stone masonry one hundred and sixty feet in length and eleven feet in height. The spillway is forty-eight feet in length and located at the west end.

It is built of dry stone masonry and carries three feet of flashboards. These flashboards are removed in the Spring and in time of high water by the owner. The pond is eight acres in area and a sawmill and cidermill are connected, both of which are being still operated. The dam is in fair condition. It was built in 1864, and is in the hands of the same family ever since.

ANTHONY KOWALZIK DAM.-- Upstream about one and one-quarter miles from the Alden Brothers dam, last described, at a point in the brook where the drainage area contributory is five and three-quarters square miles, is a dam belonging to Anthony Kowalzik, Alden Street, R. F. D., Ludlow, Mass.

It is a dry stone masonry spillway structure backed with earth. The spillway was raised two feet from its original height by the laying of a concrete wall sixteen inches in width. The total height of the spillway is seven and one-half feet and the embankment is only a foot higher.

Inasmuch as the crest of the spillway is in poor condition, and the spillway is leaking, it is recommended that repairs be made thereon and that the top of the embankment be raised at least to three feet above the crest of the spillway. To this dam was attached a horse-radish factory which moved to Indian Orchard about three years ago. The factory has not been put to any use ever since. The area of the pond formed is about four acres and is a shallow body of water.

CITY OF SPRINGFIELD WATER WORKS DAM.-- Ludlow Reservoir is located in the northeast corner of the town of Ludlow about one-half mile upstream on the main tributary of Broad Brook. The reservoir has a surface area of four hundred and forty-eight acres and a total drainage area contributory including Jabish Brook, of twenty-one square miles.

The dam which forms the reservoir, is an earthen embankment thirteen hundred feet more or less, in length and 40 feet in height with its overflow at the south end. The dam and overflow are in good condition, and under the constant inspection of the engineering department of the Springfield Water Works.

ELMER H. CARVER DAM.-- Stony Brook rises on the west slope of Bagg Hill in the town of Granby, flows two miles southwest into Ludlow, thence northwest through Granby and South Hadley to the Connecticut River into which it empties one and one-half miles west of South Hadley Center. It is about ten miles in length and has a total drainage area of twenty-one square miles.

In Ludlow City, at a point where the drainage area contriutary is five and one-third square miles, is a dam belonging to Elmer H. Carver, West Street, Ludlow, Mass. It is an earthen embankment one hundred feet, or thereabouts, in length having a concrete spillway in the center forty-three and one-half feet in length.

The height of the spillway is six and one-half feet, and the top of the embankment about eight feet. The dam was repaired two years ago and a new spillway constructed. It is in good condition and forms a pond of about three acres. To it is attached a sawmill which is a going concern.

NATURAL PONDS.-- The seven natural ponds in the town of Ludlow are Second Pond, Lyons Pond, Chapins Pond, Shaws Pond, Pickerel Pond, Wood Pond, and Minechoag Pond.

SECOND POND.-- Second Pond is located one and one-quarter miles southeast of Ludlow City on the headwaters of a tributary of Stony Brook. It has a surface area of thirteen acres and a drainage area of not more than one-quarter of a square mile.

LYONS POND.-- Lyons Pond is located one and one-quarter miles northwest of Ludlow Center on the headwaters of a tributary to High Brook. It has a surface area of ten acres and a drainage area of about one square mile.

CHAPIN POND.-- Chapin Pond is located about one mile north of Ludlow and drains into the Chicopee River, although it has no visible outlet. It has a surface area of forty-five acres and a drainage area of not more than one-quarter of a square mile.

SHAWS POND.-- Shaws Pond is situated a half mile west of Pickerel Pond, drains into the Chicopee River, covers a surface of eleven acres, and a drainage area of about a quarter of a square mile.

PICKEREL POND.-- Pickerel Pond is located one-quarter of a mile west of Chapin Pond, drains into the Chicopee River, has a surface area of Eleven acres, and a drainage area of about one-eighth of a square mile.

WOOD POND.-- Wood Pond is situated about one-quarter of a mile south of Chapin Pond, drains into the Chicopee River, covers a surface area of thirty-one acres, and has a drainage area of about one-eighth of a square mile.

MINECHOAG POND.-- Minechoag Pond is located three-quarters of a mile southeast of Wood Pond, drains into the Chicopee river, covers a surface area of eighteen acres, and has a drainage area of about one-half square mile.

MONSON

There are thirtyeight dams and two natural ponds in Monson. Of the dams, one is on the Quabog River, three on small tributaries of the Quabog River, eleven on Chicopee Brook, eleven on small tributaries of Chicopee Brook from the west, one on a small tributary of Chicopee Brook from the east, one on Conant Brook, two at Squire's Pond, seven on Twelve Mile Brook and one on Calkins Brook, a tributary of Twelve Mile Brook. Of the two natural ponds, one is known as Duck Pond, and the other as Bald Peak pond.

DUCK POND.-- Duck Pond is situated in the western part of the town of Monson, about two miles southeast of South Monson Center, covers about three acres and has not more than a quarter of a square mile of drainage area. It has no dam across its outlet.

BALD PEAK POND.-- Bald Peak Pond is near the top of Bald Peak Mountain about three-quarters of a mile southwest of the Monson State Hospital, drains into a small tributary of the Quaboag River and has a drainage area of not over a tenth of a square mile. There is no dam across its outlet.

FEARING WHITTEN COMPANY DAM.-- The Quaboag River, which is one of the three principal tributaries of the Chicopee River, flows from the Quaboag Pond in Brookfield to the Brookfield-Warren boundary line; thence through Warren, Brimfield and Palmer to Three Rivers where it, with the Swift and Ware Rivers, forms the Chicopee River. The Quaboag River is twenty-three miles in length and has a total drainage area of two hundred and ten square miles.

In Blanchardville, so called, upstream about one and one-half miles from Palmer, where the drainage area contributory is one hundred and seventy-seven square miles, is a dam belonging to the Fearing Whitten Company, 65 Franklin Street, Boston, Mass.

It is an earthen embankment faced with concrete, seventy feet in length and eight feet in height. The dam is in fair condition, and to it is attached a mill which formerly made woolen goods and afterwards leather board. For some time the mill has been shut down and the plant is now apparently abandoned.

MONSON STATE HOSPITAL DAM NO. 1.-- This structure is on a small tributary of the Quaboag River, which rises on the southeast slope of Bald Peak Mountain, flows north to the Quaboag River into which it empties about half a mile downstream from the mouth of Chicopee Brook, and belongs to the Monson State Hospital.

Its location is on the State Hospital grounds about half a mile upstream from the mouth of the tributary, at a point where the drainage area contributory is about a square mile. It is an earthen embankment faced on its upstream side with concrete masonry and with rubble masonry on its downstream side. Its length is one hundred and twenty feet and its height twelve feet. The pond formed is about one-eighth of an acre and is used as an ice pond. The dam is in fair condition.

MONSON STATE HOSPITAL DAM NO. 2.-- On a small tributary of the last described tributary, into which it empties just below the last described dam, is another dam belonging to the Monson State Hospital. It is also located on the state hospital land about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is about a quarter of a square mile.

The structure is built of earth excavated, apparently, from the bed of the reservoir which it forms, is two hundred feet in length and twelve feet in height. The structure is in good condition and the reservoir formed by it covers about one-eighth of an acre. The reservoir is used, apparently, for fire protection and irrigation.

RALPH VAN WAGNER DAM.-- This structure is on a small tributary of the Quaboag River into which it empties, from the west, about one thousand feet north of the Monson-Palmer boundary line, and belongs to Ralph Van Wagner, Palmer, Mass.

It is located on the south side of the Boston road, about a mile west of Palmer and upstream about two thousand feet from the mouth of the tributary, at a point where the drainage area tributary is three-quarters of a square mile. The dam is an earthen embankment one hundred and eighty-nine feet in length and nine feet in height. The pond formed by it covers about two acres and is used as an ice pond.

The plan of the dam is curved concaved upstream and has two spillways or overflows, one in the center of the structure and another near its south end. The structure was originally built by the Wright Wire Company in Palmer to furnish a water supply, but was abandoned for that purpose some years ago and sold to the present owner.

The dam is in poor condition, and it is recommended that it be repaired and the spillways enlarged and permanently constructed if the ice pond is to be maintained; otherwise the pond should be drawn down. The trees growing on the downstream face of the embankment should be cut down.

RUBWOOD WHEEL COMPANY DAM.-- Chicopee Brook rises in a small pond southeast of Peaked Mountain; thence flows northerly through the town of Monson to the Quaboag River into which it empties, a little southeast of Palmer. It is about eight miles in length and has a total drainage area of twenty-three square miles.

Ascending the brook, the first dam is located about two miles from its mouth in North Monson, at a point where the drainage area tributary is about twenty-one square miles. The structure belongs to the Rubwood Wheel Company, Monson, Mass., of which Harry N. Atwood is president.

The dam is a masonry faced spillway structure backed with earth. It is eighty-two feet in length and ten feet in height with its west end abutting the highway. It was rebuilt two years ago and is in first class condition.

W. C. MOULTON DAM NO. 1.--About a half mile upstream from the Rubwood Wheel Company dam, at a point where the drainage area tributary is twenty square miles, is located a dam belonging to W. C. Moulton, Monson, Mass. This is a spillway structure ninety feet in length, ten feet in height and built of dry stone masonry backed with earth.

To the structure is attached a grist and sawmill. The gristmill has been out of commission for years and the sawmill is only run intermittently. The dam was overhauled and repaired about five years ago. It needs some repairing again, as some of the stones in the facing have become loose and are falling out. These stones should be reset in place.

W. C. MOULTON DAM NO. 2.-- This dam is on a tributary of Chicopee Brook into which it empties from the west, a short distance above the Moulton dam, last described. It abuts the west side of the highway which forms the dam and where the drainage area tributary is about one-third of a square mile. The pond formed covers about a quarter of an acre and is used as an ice pond. Since the highway is carried by the dam, it is unnecessary to say that the structure is in a stable condition.

HEIMANN & LICHTEN INC. DAM.-- On Chicopee Brook, upstream about a mile from the W. C. Moulton dam No. 1, at a point where the drainage area tributary is fifteen square miles, is a dam belonging to Heimann & Lichten Inc., Monson, Mass. It is a masonry spillway structure backed with earth seventy-five feet in length and ten feet in height to which is attached a horizontal apron along the toe of the spillway. The pond formed by the structure is small and probably not over an acre and a half in area.

The dam is in good condition. The plant attached to the dam is a hat shop which employs, in the busy seasons of the year, from two hundred to three hundred hands. Previous to thirteen years ago when it was turned into a hat shop, it was a woolen mill and run and owned by Cushman & Sons.

A. D. ELLIS & SONS NO. 3 DAM.-- About half a mile upstream from Heilmann & Lichten Inc. dam, at a point where the drainage area contributory is fifteen square miles, is a dam belonging to A. D. Ellis & Sons, Monson, Mass., known as No. 3 dam. This structure is located just south of the main highway through Monson.

It is curved in plan convex upstream, built of heavy granite masonry, is fifty-five feet in length, and nineteen feet in height. The structure was built in 1908 and is in excellent condition. The plant attached is a woolen mill and employs about two hundred hands.

RICKETTS & SHAW DAM.-- Upstream about one thousand feet from the A. D. Ellis & Sons No. 3 dam, last described, at a point where the drainage area is thirteen and one-half square miles, is a dam belonging to Ricketts & Shaw, Monson, Mass.

The dam is a dry stone masonry structure backed with earth. It is not laid across the stream in a straight line, but its plan forms an angle with the apex downstream and with one of the legs seventy-five feet and the other sixty feet in length. The height of the structure is thirteen feet.

The structure is not in very good condition as there is some leakage around the angle in the dam and towards the west end which requires re-pairing. The stone facing also should be pointed. The pond formed by the dam covers about four acres more or less and is partially filled with silt around the dam. The plant attached is a woolen mill and a going concern. Previous to fifteen years ago, it belonged to A. D. Ellis & Sons and was known as No. 2. mill.

A. D. ELLIS & SONS NO. 1. DAM.-- Five hundred feet upstream from the Ricketts & Shaw dam, last described, at a point where the drainage area contributory is thirteen and one-half square miles, is a dam belonging to A. D. Ellis & Sons, Monson, Mass., known as dam No. 1.

It is a masonry spillway structure backed with earth eighty feet in length and sixteen feet in height. The structure is in good condition with the exception of the joints of the masonry which requires pointing. The plant attached, like that attached to the A. D. Ellis & Sons No. 3 dam, is a woolen mill.

MONSON ASSOCIATES CORPORATION DAM.-- About two thousand feet upstream from the A. D. Ellis & Sons No. 1 dam, at a point where the drainage area contributory is five square miles, is a dam belonging to the Monson Associates Corporation, Monson, Mass. This is a stone spillway structure backed with earth. It is fifty feet in length and eleven feet in height.

It diverts water into a canal and forebay connected with the mill about one thousand feet below. The dam is in fair condition, but there is some brushwood growing in and around the structure which should be cut down. The corporation was advised about this when the inspection was made. The mill attached is a woolen mill and, at present, a going concern.

W. C. MOULTON DAM NO. 3.-- Farther upstream about a mile and a half from the Monson Associates Corporation dam, last described, at a point where the drainage area contributory is about two square miles, is a third dam belonging to W. C. Moulton, Monson, Mass.

It is a dry stone spillway structure backed with earth, seventy feet in length and nine feet in height. The pond formed by the structure is of considerable size from which the water was taken to run a sawmill. The sawmill is now abandoned and in a dilapidated condition with penstock and gates connected therewith broken down and in a state of decay.

The dam itself is in poor condition and requires repairing, especially the crest. The pond is used as an ice pond, and if it is to remain such, it is recommended that the structure be repaired and made safe. Otherwise, an opening should be made through the structure and the pond drawn down.

ALDRICH DAM.-- Upstream about a mile and a quarter from the W. C. Moulton dam was located the Aldrich pond and dam. At present there is no pond and only a small part of the dam remains. Therefore, no future inspection of this derelict will be necessary.

C. P. BRADWAY DAM NO. 1.--About a half mile upstream from the Aldrich dam, last described, or a mile and three-quarters from the W. C. Moulton dam, at a point about sixty feet south of the highway; where the drainage area contributory is a little over a quarter of a square mile, is a dam belonging to C. P. Bradway, West Stafford, Conn.

It is an earthen embankment faced with dry stone masonry to which is attached a work shop long since abandoned and now in a dilapidated condition. The dam is about sixty feet in length and eight feet in height. The penstock, headgates, flume, spillway, etc. are broken down and the debris formed heaped up in the bed of the brook. This should be removed in order to make a free water way for the brook.

C. P. BRADWAY DAM NO. 2.-- Eight hundred feet upstream from the C. P. Bradway dam No. 1 at a point, where the drainage area contributory is about a quarter of a square mile is another dam belonging to C. P. Bradway. It is an earthen embankment faced downstream with dry stone masonry and upstream with cobblestone laid as a riprap.

The structure is seventy-five feet in length, eleven feet in height, and about thirteen feet in width on top. The pond formed covers about five acres, and the water is conveyed therefrom in a pipe to the sawmill at the foot of the hill five hundred feet below.

The "head" or fall created is at least seventy feet high. The sawmill is still in commission, but is operated only occasionally. The dam requires repairs, especially the overflow or spillway located at the north end of the dam. This should be rebuilt and the top of the dam raised at least two and one-half or three feet above the crest of the spillway in order that intense flood flows may not top the structure and thus destroy it.

HORACE BUNSTEAD DAM.-- On a tributary of Chicopee Brook that rises about three-quarters of a mile northeast of Peaked Mountain and flows directly east to Chicopee Brook into which it empties about half a mile upstream from the Smith Pond, so called, is a dam belonging to Horace Bunstead, Monson, Mass.

This structure is located about one thousand feet from the mouth of the tributary along the west boundary line of the highway that crosses the brook where the drainage area contributory is less than a quarter of a square mile.

The structure is an earthen embankment faced with dry stone masonry, seventy feet in length and six feet in height. The pond formed which is used as a fishing pond, is small and only a few feet in depth. The dam is in fair condition, but notwithstanding, it is recommended that its top be raised at least two feet above the crest of the spillway.

JUDSON R. CALKINS DAM.-- On a tributary that rises on the east slope of West Hill and flows easterly, southerly and easterly to Chicopee Brook into which it empties about a half mile downstream from the Smith Pond, so called, is a dam belonging to Judson R. Calkins, Monson, Mass.

This structure is located about three-quarters of a mile from the mouth of the tributary at a point in close proximity to the highway that crosses the tributary, where the drainage area is three-quarters of a square mile. It is an earthen embankment faced with dry cobblestone masonry on the downstream side. The spillway or overflow is built of heavy masonry and is a stable structure. The pond formed by the dam is a considerable body of water, covers about ten acres and is used as an ice pond.

Outside the spillway, the dam is in poor condition and its height in some places is very little above the crest of the spillway. The wonder is that it hasn't been washed away long ago. The part abutting the east corner of the spillway is in a state of rupture and part of the stonework has fallen out of place. Because of the large size of the pond, it is recommended that the structure be put in condition or else the pond be drawn down, as soon as possible, the structure, if not repaired, will fail.

JOSEPH LABELLE DAM.-- Upstream about a mile from the Judson R. Calkins dam, at a point five or six hundred feet west of the highway where the drainage area tributary is about one-tenth of a square mile, is a dam belonging to Joseph Labelle, Springfield, Mass.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and about three feet in height. The pond formed covers about a quarter of an acre and is used as an ice pond. The dam is in fair condition and even if it did fail, the released water would be so small in quantity that no damage would be done thereby. No future inspection of this structure will be necessary.

W. G. MEACHAM DAM.-- On a tributary of the brook last described into which it empties, at a point about one thousand feet downstream from the Calkins dam, is a dam belonging to W. G. Meacham, Monson, Mass. This dam is located about eight hundred feet from the mouth of the tributary, at a point where the drainage area tributary is less than a quarter of a square mile.

It is an earthen embankment eighty feet in length and not over two and a half feet in height. The pond formed thereby covers about an acre and is used as a fish pond. It seems to be a natural pond raised by the dam. The dam is in fair condition, but inasmuch as the volume of pondage formed by it is small and would not do any material damage in case of failure of the structure, no future inspection of it will be necessary.

JOSEPH KASPERZAK DAM.-- On a tributary of Chicopee Brook that rises on the east slope of West Hill and flows east to the Chicopee Brook into which it empties at the A. D. Ellis & Sons No. 1 dam, is a dam belonging to Joseph Kasperzak, Monson, Mass. This structure is located about a mile from the mouth of the stream and about five hundred feet west of the highway where the drainage area tributary is a half a square mile.

It is an earthen embankment one hundred and eighty feet in length and not over five feet in height. Its overflow is a culvert laid through the structure from a well located in the upstream face of the dam. The pond formed by the structure is small and is used as an ice pond. The dam is in good condition, but inasmuch as the pondage formed by it is very small and that no damage would be done by the released water in case of failure of the structure, no future inspection of it will be necessary.

SULLIVAN BROTHERS DAM.-- Sullivan Brook rises in Smith Pond on the east slope of West Hill, flows northerly and thence easterly through Monson Center to Chicopee Brook into which it empties about a half mile downstream from the Heimann & Lichten Inc. dam.

It is about two and a half miles in length and has a drainage area of two square miles. There are four dams on this brook. Ascending the brook the first dam is located about two thousand feet upstream from its mouth on the west side of the street, east of the cemetery, at a point where the drainage area contributory is about two square miles and belongs to William and Cornelius Sullivan, Monson, Mass.

It is a dry stone masonry spillway structure backed with earth sixty-six feet in length, and thirteen and one-half feet in height. The spillway is twenty-six feet in length with its crest two and one-half feet below the top of the dam. The pond formed by the structure is very small and practically filled with silt.

The dam is in fair condition, although there are some minor repairs needed on the structure. From the pond is laid a pipe about six hundred feet in length downstream to a cider mill, which is still in use. Formerly the establishment attached was a box shop, and this water privilege was developed over one hundred years ago.

WALTER GOLD DAM.-- About five hundred feet upstream from the Sullivan Brothers dam, at a point where the drainage area contributory is practically two square miles, is a dam belonging to Walter Gold, Amherst, Mass.

It is a dry stone masonry spillway structure backed with earth thirty-one feet in length between abutments and nine feet in height. The pond formed by the structure is small, and the structure is in fair condition. The shop attached has not been operated for years.

JAMES J. BURDICK DAM.-- Three hundred feet upstream from the Walter Gold dam and across the street from the latter, at a point where the drainage area is a little less than two square miles, is a dam belonging to James J. Burdick, Monson, Mass.

It is an earthen embankment two hundred and twenty feet in length and fourteen feet in height faced downstream with heavy stone. The spillway is thirty feet in length with its crest two feet below the top of the embankment and is located in the middle of the structure. It is built of derrick stone, coped with concrete and backed with earth.

The pond formed covers about an acre and is a shallow body of water. To the structure is attached a small machine shop which runs, nowever, only intermittently for the past few years.

The dam is in fair condition except at the south end of the spillway where the stone work requires re-setting and pointing. Some repairs are also necessary around the penstock.

GEORGE C. FLINT DAM.-- On the headwaters of Sullivan Brook at the outlet of Smith Pond, so called, where the drainage area contributory is a quarter of a square mile, is a dam belonging to George C. Flint, Monson, Mass. The structure is an earthen embankment faced up and downstream with riprap. It is one hundred and twenty-five feet in length and six feet in height.

Its overflow is located about thirty feet from its north end, is four feet wide with its crest eight inches below the top of the dam. The area of the pond is about fifteen acres and it appears that the pond is a natural one raised by the dam. The dam is not in very good condition, although not unsafe. To increase its factor of safety, the top of the structure should be raised at least two feet above the crest of the overflow.

C. A. BRADWAY DAM.-- On a very small tributary of Chicopee Brook which it joins, about a quarter of a mile downstream from the Heilmann & Lichten Inc. dam, is a structure belonging to C. A. Bradley, Monson, Mass. This structure is located on the northwest side of Ely Road at a point where the drainage area contributory is less than a quarter of a square mile.

It is a stone structure five feet in height backed with earth. The pond formed by the structure is very small and filled with silt. For this reason, no future inspection of it will be necessary.

RUEWOOD WHEEL COMPANY DAM NO. 2.-- This is on a small tributary of Chicopee Brook into which it empties from the east at Monson Center and belongs to the Ruewood Wheel Company, Monson, Mass. It is located about half a mile upstream from the mouth of the tributary and three-quarters of a mile west of Monson, at a point where the drainage area contributory is half a square mile.

The dam is an earthen embankment curved in plan concave upstream. Its downstream slope is built of dry cobblestone. The structure is two hundred feet in length, twelve feet in height and ten feet wide on its top.

It is the old dam of the Sullivan Ice Pond overhauled and repaired. There is a spillway located in the center of the structure and an overflow in the natural ground at the north end. The spillway in the dam is built of concrete with its crest two feet below the top of the structure. This spillway, in which stop planks are used, is only for drawing down and regulating the height of the pond under normal conditions as in time of high water, the waste passes through the overflow located at the north end of the structure.

Notwithstanding that the structure has been overhauled last Summer, there is some leakage through it and it is recommended that this leakage be repaired. The pond formed by the structure is about an acre in area.

TOWN OF MONSON WATER WORKS DAM.-- Conant Brook rises in the town of Wales about one and a half miles southwest of Wales Center, flows southwest and then northwest into and through Monson to the Chicopee Brook which it joins at South Monson. Conant Brook is five miles in length and has a total drainage area of about eight square miles.

Upstream about a mile and a quarter from its mouth, at a point where the drainage area contributory is seven and a half square miles is located a dam belonging to the town of Monson Water Works. It is an earthen embankment faced with masonry on its up and downstream sides, one hundred and fifty feet in length and sixteen feet in height. The spillway is located in the middle of the structure, the crest of which is concrete and two feet below the top of the dam. The dam is in good condition and forms a pond of a couple of acres.

EDGAR SQUIRE DAMS.-- On Ingalls Brook, at a point where the drainage area contributory is one-tenth of a square mile, is a dam belonging to Edgar Squire, R. F. D. Monson, Mass. It is an earthen embankment eighty feet in length and six feet in height. At the north end of the pond there is another small dam in which the spillway is located. The spillway is twelve feet in length and only a few feet in height. The pond formed covers about four acres and both dams are in fair condition.

S. M. GREEN DAMS.-- Twelve Mile Brook rises on the north slope of Moose Mountain in the town of Monson, flows north and northwest to the Monson-Wilbraham boundary line; thence northwest through Wilbraham to the Chicopee River into which it empties, at a point about one mile upstream from North Wilbraham. The brook is six miles in length and has a total drainage area of fifteen and one-third square miles.

Ascending the stream, the first four dams on Twelve Mile Brook in Monson are in close proximity to each other and belong to S. M. Green, Springfield, Mass. These dams are located near Silver Street half a mile upstream from the Monson-Wilbraham boundary line, at a point where the drainage area contributory is about six and three-quarters square miles for the first three dams and about five square miles for the fourth.

The first of these dams is a masonry stone structure backed with earth, one hundred and fifty feet in length and ten feet in height. It has a concrete spillway at its south end twenty-five feet in length and one at its north end six feet in length. The whole top of the dam, however, can act as a spillway in time of flood flow without any damage being done to the structure. The pond formed is about one-half acre. The dam is in good condition.

A few hundred feet upstream is the second and five hundred feet beyond that, the third dam belonging to Mr. Green. These are earthen embankments with very ample spillways or overflows. The lower structure is one hundred and ninety-five feet in length and fifteen feet in height. The upper structure is one hundred and eighty feet in length and sixteen feet in height.

Both structures form a pond of 24 acres. They were built about two years ago and are in excellent condition. The fourth dam is located about three hundred feet upstream from the pond formed by the two dams last described. It is a dry stone masonry structure backed with earth, two hundred feet in length and fifteen feet in height.

The spillway is fifty feet in length with its crest about three feet below the top of the dam. The pond formed is about one and a half acres. The structure is in good condition, but in case of failure no damage would be done by the released water as it would discharge directly into the large pond below.

DR. R. A. BALDWIN DAM NO. 1.-- About one thousand feet upstream from the S. M. Green dam No. 4, last described, where the drainage area contributory is five square miles, is a dam belonging to Doctor R. A. Baldwin, 162 Long Hill Street, Springfield, Mass. This structure is formed by the highway, in front of which is a concrete spillway over which the waste water discharges into a culvert laid through the highway. The dam is ten feet in height, forms a pleasure pond of about six acres and is in good condition.

DR. R. A. BALDWIN DAM NO. 2.-- About two thousand feet upstream from the Baldwin dam No. 1 last described, at a point where the drainage area contributory is four square miles, is a dam which also belongs to Dr. R. A. Baldwin, 162 Long Hill Street, Springfield, Mass.

This is a dry stone masonry structure backed with earth, two hundred and twenty-five feet in length and about ten feet in height. The length of the spillway, which is in the center of the dam, is forty-five feet with its crest two feet below the top of the dam.

The dam forms a pond known as Silver Lake, but formerly known as Friday Pond. It covers about five or six acres and is used for fishing and pleasure purposes. The dam requires some repairs, as the stone work of the crest is loose, out of place, and should be reset in mortar; otherwise, the structure is in fair condition and seems to be a very old one.

LYMAN C. FLINT DAM.--- The next and last dam on Twelve Mile Brook from its mouth is about two miles upstream from the Baldwin dam No. 2 last described, at a point where the drainage area is one and a half square miles and belongs to Lyman C. Flint, Monson, Mass.

It is an earthen embankment one hundred and seventy feet in length and fifteen feet in height faced with dry stone masonry downstream. The spillway is twenty-four feet in length with its crest two feet below the top of the dam. Formerly there was a saw and gristmill attached to the structure which have gone out of existence years ago. The pond formed by the structure covers about three acres and is used apparently as a fishing and pleasure pond.

The dam is in poor condition and leaks considerably. It is recommended, therefore, that if the dam is to be maintained, the leakage be repaired and that meanwhile the pond be drawn down which the owner proposed doing on being told of the condition of the structure.

ANNA D. NICOLET DAM.--- Galkins Brook rises on the west slope of Bald Peak in Monson, flows westerly to the Monson-Wilbraham boundary line, thence through Wilbraham to Twelve Mile Brook into which it empties at Ellis Mills. It is about two miles in length and has a total drainage area of three and a quarter square miles.

About three-quarters of a mile upstream from its mouth, at a point where the drainage area contributory is two and three-quarters square miles, is located a dam belonging to Anna D. Nicolet, Monson, Mass.

It is an earthen embankment faced downstream with cobblestone, one hundred and forty-five feet in length and twenty feet in height. The mill is located against the downstream slope and is a sawmill which, for some years, has been operated only occasionally. At one time, gun stocks were made in this establishment for the government and, at another time brake shoes for the Boston and Albany Railroad.

Its top is thirty-one feet in width and is used as a mill yard. The spillway is a sluice gate connected with the mouth of the culvert five feet wide and seven feet deep laid through the south end of the dam. In time of flood flow, this gate has to be opened to increase the discharge from the pond and prevent water from topping the dam.

An arrangement of this kind is a very poor one, and it is recommended that a surface overflow of sufficient size be added to the south end of the dam. When this improvement was drawn to the attention of the owner who has the property only a comparatively short time, he said that he had the matter under consideration and that it was his intention to build an overflow the coming year.

MONTGOMERY

In Montgomery there are seven dams and one natural pond. Of the dams, three are on Moose Meadow Brook, one on a small tributary of Moose Meadow Brook, one on Sackett Brook, one on Roaring Brook, and one on a tributary of Roaring Brook.

SHATTERACK POND.-- Shatterack Pond is the only natural pond in the town of Montgomery. It is located about one mile southwest of Montgomery Center on the headwaters of Shatterack Brook, has a surface area of about seventeen acres and a drainage area of not over a quarter of a square mile.

CITY OF WESTFIELD WATER WORKS DAM NO. 1.-- Moose Meadow Brook rises in the town of Montgomery on the west slope of Bungy Hill, flows south and southwest through Montgomery and Westfield to the Westfield River into which it empties about two miles downstream from the Westfield-Russell boundary line. It is six and a half miles in length and has a total drainage area of six and a half square miles.

Near its intersection with the Montgomery-Westfield boundary line, at a point where the drainage area tributary is four and a half square miles, is located a dam belonging to the City of Westfield Water Works. It is a stone masonry structure backed with gravel laid on a rock foundation and was built in 1874. It is two hundred feet in length and thirty and a half feet in height.

The spillway is thirty-one feet in length, the crest of which is two and a half feet below the top of the dam. The reservoir formed by the structure is the intake of the ^{Montgomery} system of the Westfield Water Works.

WESTFIELD WATER WORKS DAM NO. 2.--About two miles upstream from the intake reservoir described, at a point where the drainage area tributary is two square miles, is located the Westfield Water Works Storage Reservoir. This covers a surface area of about thirty-eight acres. The dam forming the reservoir is an earthen embankment three hundred and fifty-seven feet in length and about thirty feet in height.

The spillway is built of concrete, located at the east end of the dam. It is nineteen feet in length with its crest five feet below the top of the dam. The spillway discharges into a concrete channel which conducts the water away from the toe of the dam to the brook below, a distance of about three or four hundred feet.

WESTFIELD WATER WORKS DAM NO. 3.-- The next and third dam belonging to the Westfield Water Works on Moose Meadow Brook is about a half mile upstream from the storage reservoir dam, at a point where the drainage area is one and a half square miles.

This is a stone structure sixty-five feet in length and seven feet in height. Its spillway is at the east end. It was a sawmill dam before the Westfield Water Works purchased it, apparently, for the protection of the water shed. Since it was purchased, it is used only as a storage dam. All three dams are in good condition and under the constant supervision of the officers of the City of Westfield Water Department.

ANDREW J. HALL DAM.-- On a small brook that is a tributary of Moose Meadow Brook into which it empties at the northwest corner of the Westfield Storage Reservoir, is a dam belonging to Andrew J. Hall, Montgomery, P. O. It is a stone structure about thirty-five feet in length and six feet in height. Since the ice pond formed, however, is only thirty-five by fifty feet and shallow, no future inspection of the structure will be necessary.

OSCAR B. DEAN DAM.-- Sackett Brook rises in the town of Montgomery on the southeast slope of Bungy Hill, flows southeasterly through Montgomery and Southampton to the West Branch of the Manhan River into which it empties at Russellville. Sackett Brook is two and a quarter miles in length and has a total drainage area of two and one-third square miles.

About a half mile northeast of Montgomery Center or two miles from the mouth of the brook, at a point where the drainage area contributory is one-third of a square mile, is located a dam belonging to Oscar B. Dean, Montgomery, Mass. It is an earthen embankment one hundred and fifty feet in length and five feet in height faced upstream with a stone masonry wall one foot in thickness.

The spillway is located seventy-two feet from its north end. The structure is in fair condition with the exception of a little leakage around the end of its spillway. Should the structure fail, however, because of the very small size of the pond, which is used for pleasure purposes, no damage would be caused by the released water. No future inspection of it will be necessary.

LEDRU R. CLARK DAM.-- Roaring Brook rises on Norwiche Hill in the town of Huntington, flows west and south through Montgomery to the Westfield River into which it empties about a half mile downstream from the Montgomery-Huntington boundary line. It is five miles in length and has a total drainage area of five and a half square miles.

About fifteen hundred feet upstream from its mouth at a point where the drainage area contributory is five and one-third square miles, is located a dam belonging to Ledru R. Clark, Box 25, Huntington, Mass. This structure had a sawmill attached to it of which only the traces now are left. The dam is a derelict and offers no obstruction to the natural flow of the brook. Therefore, no future inspection of it will be necessary.

DAVID TINDAL DAM.-- On a tributary of Roaring Brook two miles northwest of Montgomery Center, at a point where the drainage area contributory is one-quarter of a square mile is an ice-pond dam belonging to David Tindal, Montgomery, Mass.

It is an earthen embankment faced up and downstream with stone masonry with the upstream masonry plastered. The overflow is located in the dam thirty feet from the south end. The length of the structure is about one hundred and ninety-five feet and the height five and a half feet. It was overhauled and repaired two years ago and is in good condition. The pond formed is less than an acre.

PALMER.

There are nineteen dams and three natural ponds in the town of Palmer. Of the dams one is on the Chicopee River, namely the Otis Company dam, already described under Chicopee, three on the Swift River, one on a small

tributary of the Swift River, two on the Ware River, four on Gates Brook, one on the Quacossog River, two on Mt. Dimpling Brook, four on Graves Brook, and one on Kings Brook. The three natural ponds are Lily Pond, Brown Pond, and Pattaquattic Lake.

PATTAQUATTIC LAKE.-- Pattaquattic Lake is situated about two miles north of Palmer Center, flows into the Ware River, has a surface area of nineteen acres and a drainage area of a half square mile.

BROWN POND.-- Brown Pond is located one and a quarter miles northwest of Thorn-dike, flows into the Swift River, has a surface area of thirteen acres and a drainage area of a quarter of a square mile.

LILY POND.-- Lily Pond is located in Bondsville, flows into the Swift River, has a surface area of three or four acres and a drainage area of not more than one-tenth of a square mile. There are no dams across the outlets of these ponds.

BOSTON DUCK COMPANY DAM AT BARRETT'S JUNCTION.-- Swift River rises in North Pond in the town of Orange, Franklin County, then flows into and across Hampshire County to Bondsville from which place it forms the Hampshire-Hampden county line to its junction with the Ware River at or near the village of Three Rivers. Its length from North Pond is about thirty miles and total drainage area two hundred and thirteen square miles.

About one and a quarter miles above its mouth at Barrett's Junction, so called, is part of an old dam one hundred and twenty feet in length and ten feet in height. To this structure was attached some years ago, the Springfield Soapstone Company plant where a head or fall was developed of twenty feet by the building of a long canal between the dam or millpond and the plant.

The soapstone plant has gone out of existence years ago. In 1918 or thereabout, the property passed into the hands of the Boston Duck Company located at Bondsville. Inasmuch as the natural flow of the stream is not obstructed, no future inspection of the structure will be necessary.

BOSTON DUCK COMPANY LOWER DAM.-- Upstream in Bondsville, at a point where the drainage area contributory is one hundred and ninety-five square miles is a dam belonging to the Boston Duck Company known as the Lower Dam.

It is a stone masonry spillway structure one hundred and forty-six feet in length and fourteen feet in height. Along its downstream toe a horizontal apron is laid fifteen feet in width and built of huge granite blocks. The upstream side of the dam is filled with cobblestone and silt and the pond formed by the structure covers about six acres.

At its east end is a forebay from which a canal is laid to the hydro-electric power house some hundreds of feet downstream in which place electric energy is developed and transmitted back to the Duckville Mills above. The dam and all appurtenances are in good condition.

BOSTON DUCK COMPANY UPPER DAM.-- About a half mile upstream from the last described dam, at a point where the drainage area contributory is one hundred and ninety-four and a half square miles is another dam belonging to the Boston Duck Company known as the Upper Dam.

This is a stone masonry spillway structure one hundred and thirty-two feet in length and fifteen feet in height. Like the Lower Dam there is also laid along the toe of this structure a horizontal apron fourteen feet in width built of huge granite blocks. From its east end the water is taken in a canal to the water wheels in the mills attached. The pond formed is fifty-seven acres. The dam and appurtenances are in good condition.

BOSTON DUCK COMPANY RESERVOIR DAM.-- On a small tributary of the Swift River into which it empties just above the Boston Duck Company Upper dam, is another dam belonging to the Boston Duck Company located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is about a quarter of a square mile.

This is an earthen embankment four hundred and fifteen feet in length, ten feet in height, and ten feet in width on top. It forms a reservoir of about eight acres and was built for the purpose of a water supply for the Duckville Mills.

The overflow is a pipe laid through the dam twelve inches in diameter, which experience has shown is adequate as the pond never topped the embankment since the reservoir was built years ago. The structure is in good condition.

THORNDIKE COMPANY DAM NO. 1.-- Ware River, the largest tributary of the Chicopee River rises in the town of Westminster, Worcester County, flows southwesterly to Ware in Hampshire County; thence to and through Palmer to Three Rivers, where, with the Swift and Quabog Rivers, the Chicopee River is formed. Its drainage area is two hundred and twenty-one square miles.

In Thorndike about a mile and a half upstream from its junction with the Swift River, where the drainage area contributory is two hundred and eighteen square miles, is located a dam belonging to the Thorndike Company, Thorndike, Mass.

The dam is a stone masonry spillway structure laid on a ledge and hardpan foundation. It is one hundred and sixty-one feet in length and fourteen feet in height. It was repaired and a new crest added to it about seven years ago. It is now in fair condition. The pond formed is about four acres and the water is taken therefrom in a canal to the water wheels in the mill attached.

THORNDIKE COMPANY DAM NO. 2.-- About a half mile upstream from the Thorndike Company dam No. 1, last described, at a point where the drainage area contributory is two hundred and eighteen square miles, is located another dam belonging to the Thorndike Company.

It is a gravity masonry concrete spillway structure of the Ogee type, which replaced, about ten years ago, an old log crib structure. The dam is one hundred and seventy-four feet in length and seventeen feet in height. This dam is in good condition and forms a pondage of about twenty acres.

THORNDIKE COMPANY DAM NO. 3.-- Gates Brook rises in Lake Thompson about a mile southeast of Palmer Center, flows north to the Ware River into which it empties about a mile upstream from Wipple's Station. It is three milesⁱⁿ length and has a total drainage area of four square miles.

At a point a short distance upstream from its mouth, where the drainage is very little less than four square miles, is a dam belonging to the Thorndike Company, named here Dam No. 3.

It is a masonry spillway structure backed with earth, thirty-five feet in length, six feet in height, with its east end abutting the railway and its west end abutting the highway. The waste, after crossing the spillway, is conveyed by a culvert laid under the highway. The dam is in fair condition and forms Forest Pond, a large body of water which covers an area of sixty-two acres.

STATE FISH HATCHERY DAMS.-- There are two dams about one thousand feet apart located about one mile northeast of Palmer Center on Gates Brook where the drainage area contributory is two square miles belonging to the State of Massachusetts. These dams form ponds for the State Hatchery.

The upper dam is a concrete spillway structure sixty feet in length and nine feet in height. It is in fair condition, but is of light section and built in 1911 or 1912. The pond formed is very small. From it water is drawn through a pipe to the Hatchery, etc.

The lower dam is a low structure only a few feet in height. It is in fair condition and forms a pond of about two acres.

THOMPSON LAKE DAM.-- On the outlet of Thompson Lake which is the headwaters of Gates Brook, at a point where the drainage area contributory is one square mile, is a dam belonging to the John W. Boyle Realty Company, Springfield, Mass. The dam is an earthen embankment faced upstream with a concrete wall about one foot in thickness and downstream with dry masonry two feet in thickness at the top. Its length is eighty-two feet, height eleven feet, and its width on top thirty-four feet.

The overflow or spillway located near the center of the dam is a swale built of concrete across the top of the dam eight feet in width at its upstream end and narrowing down to four feet at its downstream end. Behind the dam is a large body of water which covers forty, or probably more, acres.

The dam, in the main, is in fair condition, although it requires some repairs, and it is recommended that the top of the embankment be raised higher than the top of the concrete facing wall and that the sides of the swale be extended five or six feet and paved with stone. It is also recommended that the downstream dry masonry wall be repaired, as it seems that some of the stones are out of place, especially around the waste drain through the dam, and that the brush and debris on and around the structure be removed.

The pond, it seems, is raised by a dam for the purpose of running a sawmill which went out of existence years ago. The pond is now used as a pleasure pond, and the dam was raised fifteen years ago six feet.

CENTRAL MASSACHUSETTS POWER COMPANY DAM.-- On the Quaboag River described under Monson is located a dam at Blanchardville, at a point where the drainage area contributory is one hundred and seventy-seven square miles belonging to the Central Massachusetts Power Company.

The dam is a log crib spillway structure sloped up and downstream and backed with earth. It is one hundred and nine feet in length between abutments and seventeen and a half feet in height. To its downstream toe is attached a horizontal apron built of planking fifteen feet in width. The structure is just after being repaired and is in good condition. It forms a millpond of about forty acres in area.

ARTHUR HOLBROOK DAM.-- Mount Dumlup Brook rises about a half mile southeast of Palmer Center and flows southwesterly to the Quaboag River into which it empties at the foot of Mount Dumlup. It is one and a half miles in length and has a total drainage area of one and one-third square miles.

Upstream about three-quarters of a mile from its mouth, at a point where the drainage area contributory is three and a quarter square miles, is located a dam belonging to Arthur Holbrook, Palmer, Mass., which was built to form an ice pond.

The dam is a wooden structure of the post deck type backed upstream with gravel. It is one hundred and eighty feet in length of which one hundred and thirty feet is a spillway with planking higher than the fill behind it and eight feet in height above the stream bed.

The structure is in poor condition as at about ninety-five feet from the east end the posts and planking are broken down and the gravel washed out for a distance of twenty feet or thereabouts. This breach or opening keeps the pond, which at its maximum height covered only about three acres, drawn down. Inasmuch as this condition exists, and the structure is apparently abandoned, no future inspection of it will be necessary.

PALMER TRUCKING COMPANY DAM.-- Upstream about a quarter of a mile from the Arthur Holbrook dam, last described, at a point where the drainage area contributory is a half square mile, is a dam belonging to the Palmer Trucking Company, Palmer, Mass., built for the purpose of forming an ice pond.

It is an earthen embankment two hundred and sixty-one feet in length, twelve feet or thereabouts in height, and eight feet wide on top. The pond formed by the dam was drawn down at the time the structure was inspected but apparently would cover less than three acres in area.

The overflow from the pond is a two foot pipe laid through the dam from a well built in the pond at the toe of the structure and is controlled by stop plank in the well. While this arrangement may be sufficient because of the small drainage area contributory to the pond, nevertheless, to increase the factor of safety, a surface overflow of sufficient capacity should be built at the west end of the structure which might be made in the form of a swale. This would protect the main embankment from any danger of flood flows topping it.

M. J. WHITTALL ASSOCIATES DAMS.-- Graves Brook rises about one and a quarter miles southeast of Palmer Center, flows south through Tennyville to the Quabog River. It is one and a half miles in length and has a total drainage area of about a square mile.

There are two dams on this brook that belong to the M. J. Whittall Associates, makers of rugs and carpets, Palmer, Mass., and are located near the factory buildings of the company in close proximity to each other. The drainage area contributory of these dams is about three-quarters of a square mile. Inasmuch as the pondage formed by these two dams is very small being used only for fire protection of the mill and washing purposes, no future inspection of them will be necessary.

PALMER WATER WORKS DAMS.-- There are two other dams on Graves Brook besides those last mentioned which belong to the Palmer Fire District No. 1, known as the Intake and Storage Reservoir dams. They are located in close proximity to each other a short distance upstream from the M. J. Whittall Associates dams, at a point in the stream where the drainage area contributory is a half square mile.

The surface area of the Intake Reservoir is one acre and that of the Storage Reservoir four acres. The Intake dam is an earthen embankment one hundred and eighty-six feet in length, twelve feet in height, and thirteen feet wide on top. The overflow is located at the west end and is nine and a half feet in

length with its crest three feet below the top of the embankment. From its crest extends a concrete channel which connects with the bed of the stream below the toe of the dam. The dam is in good condition.

About five hundred feet upstream from the Intake dam is the dam of the Storage Reservoir. It is also an earthen embankment two hundred and sixty-seven feet in length eighteen feet in height, (estimated) and twenty feet in width on top. The overflow is at its west end ten feet in width and four feet in depth built of concrete from which a concrete channel extends around the toe of the dam and discharges into the Intake Reservoir. The dam is paved on the upstream slope and like the Intake dam is in good condition, both dams being under the supervision of the officers of the Palmer Fire District No. 1.

DENNIS MAHONEY DAM.-- King Brook rises on the south and west slopes of Pataquatic Hill and flows east of south to the Quabog River into which it empties about one mile south of West Brimfield. King Brook is four miles in length and has a drainage area of about four square miles.

About two and a half miles upstream from its mouth, at a point where the drainage area contributory is one and three-quarters square miles, is a dam belonging to Dennis Mahoney, Palmer, Mass. At one time there was a gristmill attached thereto, which has long since gone out of existence with only traces of its foundation left. The dam is a crenelated with a free waterway through it, and therefore, no future inspection of it will be necessary.

RUSSELL

Of the seven dams in Russell, three are on the Westfield River, one on Westfield Little River, one on Potash Brook, one on Hazard Pond Brook, and one on Black Brook.

The three dams on the Westfield River, namely the Stratmore Paper Company Dam, The Westfield River Paper Company Dam, and the Chapin & Gould Paper Company dam will be described under West Springfield along with the other dams on the Westfield River.

CITY OF SPRINGFIELD WATER WORKS INTAKE DAM.-- Westfield Little River is formed in the southeast corner of the town of Blanford at the union of Borden and Peeble Brooks, flows southeasterly about a half mile to the Blanford-Russell boundary line; thence through Russell and Westfield forming a part of the boundary line between these two towns and empties into the Westfield River, at a point about two and a half miles upstream from the Westfield-West Springfield boundary line. It is about eleven and a half miles in length and has a total drainage area of eighty-four square miles.

In the southeast corner of the town of Russell on Westfield Little River, at a point where the drainage area is forty-eight square miles is located the City of Springfield Water Works Intake dam. It is a masonry structure built in the gorge one hundred and fifty-five feet in length and 50 feet in height.

This dam together with the Borden Brook dam already described, the Sedimentation Reservoir dam at West Parish and the Proven Mountain distribution reservoir walls all have been built by and belong to the City of Springfield Water Works, known as the Springfield Water Works Little River System which is carefully looked after by the officers of the Springfield Water Works.

STRATHMORE PAPER COMPANY DAM ON POTASH BROOK.-- On Potash Brook, (already described under Blanford) about a half mile from its mouth, at a point where the drainage area is six and one-third square miles, is located a dam belonging to the Strathmore Paper Company, Woronoco, Mass.

The dam is a masonry spillway structure of heavy section, about eighty feet in length and twelve feet in height. It is adjacent to the highway leading from Woronoco to Blanford. The pond formed by the structure is small and covers not more than a half acre. It is used as a fire protection for the Strathmore Paper Company Mills. There are two leaks in the structure which are not of much account. Nevertheless, it would be advisable for them to be repaired. Outside these leaks, the dam is in good condition.

HAZZARD POND DAM.-- This dam is located at the outlet of Hazzard Pond or Worondake Lake, and is controlled as a storage for the Strathmore Paper Company Mills. Hazzard Pond is located about one and a half miles southwest of Woronoco, on Hazzard Brook, a tributary of Potash Brook. It covers seventy-one acres and has a drainage area of one and a half square miles or thereabouts.

The dam is an earthen embankment one hundred and thirty-five feet in length and not over five feet in height. The spillway or overflow is located in the center of the structure, is twenty feet in length and built of heavy stone. There is a gate house with a pipe therefrom located in the dam a short distance from the north end of the spillway, in which the gates are installed that control and regulate the height of the pond.

It seems that the pond is a natural body of water raised by the dam. The dam is in fair condition but as there is considerable debris in the bed of the brook between the spillway and highway bridge twenty-five feet downstream, consisting of old timbers and planking, etc., it is recommended that this debris be removed and also the brush cut and cleared away along the toe of the spillway.

TOWN OF RUSSELL WATER WORKS DAM.-- Black Brook rises in the northeast corner of Blanford, flows southeast into Russell where it joins Freeland Brook near Russell Center. It is about three miles in length and has a total drainage area of four and a quarter square miles.

At a point about three-quarters of a mile northwest of Russell Center where the drainage area tributary is three and three-quarters square miles, is a dam belonging to the town of Russell Water Works.

The dam is a concrete masonry structure about one hundred feet in length, forty of which is a spillway, and eighteen feet in height. The dam is laid in a gorge with its foundation and its ends abutting rock ledge. The pond formed is small and not over one-half of an acre in area. The structure is in first-class condition.

SOUTHWICK

There are nine dams and two natural ponds in Southwick. Of the dams, two are on Great Brook, five on tributaries thereto, and two on Sodom Brook. The natural ponds are the Congamond Lakes, and Goose Pond.

CONGAMOND LAKES.-- Although the Congamond Lakes have been raised in height above their natural state by two small dams, one across the outlet into Connecticut, and the other across the outlet into Great Brook, a tributary of the Westfield River, these dams, because of their immaterial heights and the large area of the

lakes, are disregarded and ^{the} lakes are classified under and listed with the natural ponds not having dams across their outlets in the table on page 2.

These Lakes are situated in the southeast part of Southwick, have a drainage area of about four square miles and cover an area of five hundred and thirty acres.

GOOSE POND.-- Goose Pond is situated about a half mile west of the most southerly end of the Congamond Lakes and drains into the State of Connecticut. Its drainage area is about three-quarters of a square mile and the pond proper covers only a few acres surrounded by a swamp.

W. F. FLETCHER DAM NO. 1.-- Great Brook rises in the Congamond Lakes, flows west and northeast through Southwick and Westfield to the Westfield River into which it empties about a mile upstream from the Westfield-Agawam boundary line. It is eight miles in length and has a total drainage area of twenty-five and one-third square miles.

At a point about three miles upstream from the Westfield-Southwick boundary line and three-quarters of a mile east of Southwick Center, where the drainage area contributory is twelve and three-quarters square miles, is a dam belonging to W. F. Fletcher, Southwick, Mass.

This dam is known as the old Powder Mill dam and since a great part of this structure has gone out and offers no obstruction to the flow of the brook, no future inspection of it will be necessary.

W. F. FLETCHER DAM NO. 2.-- About a half mile upstream from the W. F. Fletcher dam No. 1, last described, at a point where the drainage area contributory is twelve and one-third square miles, is another dam belonging to W. F. Fletcher, Southwick, Mass.

This is an earthen embankment one hundred and seventy feet in length and 13 feet in height. Its spillway is seventy-three feet in length and is located in the structure near the south end. It is built of dry stone masonry backed with earth. The structure is in fair condition and forms a pond covering about 5 acres. To it is attached a plant containing a saw and gristmill which are going concerns.

The two small dams across the outlets of Congamond Lakes mentioned above are, it is understood, maintained by and under the control of the said W. F. Fletcher who uses the lakes as a feeder for his millpond in low water.

PETER BUZOKI DAM.-- Kellogg Brook, a tributary of Great Brook rises on the north slope of Round Hill at the Southwick-Westfield boundary line, flows southeast and northeast into Westfield where it joins Great Brook, at a point two thousand feet downstream from the Southwick-Westfield boundary line. It is one and a half miles in length and has a total drainage area of about one and a half square miles.

At a point about a mile upstream from its mouth on the property of Peter Buzoki, Southwick P. O. where the drainage area contributory is three-quarters of a square mile, is the trace of an old sawmill dam. Inasmuch as it offers no obstruction to the brook, no future inspection of it will be necessary.

HENRY W. ELY, ESQ. DAM.-- About five hundred feet upstream and across the highway from the Peter Buzoki dam, at a point where the drainage area contributory is about a half square mile is a dam belonging to Henry W. Ely, Esq., Westfield, Mass.

This is a small diversion dam built of earth one hundred and twenty-five feet in length and three or four feet in height. The spillway is a swale in the top of the dam, faced upstream with cobblestone and downstream with plank. From the dam extends a canal for some distance downstream to a point within a couple of hundred feet or thereabouts of the highway where it connects with a hydraulic ram. Formerly it connected with a tannery at this point.

Inasmuch as the diversion dam forms hardly any pond, no future inspection of it will be necessary.

SMITH & HASTINGS DAM.-- At a point fifteen hundred feet from its mouth on a tributary of Great Brook from the south where the drainage area is two and three-quarters square miles, is a dam which now or formerly belonged to Smith & Hastings, Southwick, Mass. Inasmuch, as the structure is a derelict with a great part of it gone out, and as it offers no obstruction to the free passage of the brook, no future inspection of it will be necessary.

CHARLES D. ROOD DAM.-- Upstream about two thousand feet from the Smith & Hastings dam, at a point where the drainage area tributary is about one square mile, is located a dam belonging to Charles D. Rood, 31 Elm Street, Springfield, Mass.

This is an earthen embankment curved in plan, sixty feet in length, and about seven feet in height. Its spillway is located in the center of the structure, is seven and a half feet in length with its crest one foot below the top of the dam. The spillway is in poor condition and the embankment at either end of it is washed out. If the pond, which covers a couple of acres, is to be maintained, the dam should be repaired with a permanent spillway placed therein, and the top of the embankment raised two and a half or three feet above the crest of the spillway.

B. W. FARNUM DAM.-- Two miles southwest of Southwick Center on a tributary of Great Brook, at a point where the drainage is a little over one square mile, is an old sawmill dam with the mill gone out of existence for years.

Inasmuch as part of the dam has gone out and that no obstruction is offered to the free passage of the brook, no future inspection of it will be necessary.

ROY K. LAMBSON DAM.-- Sodom Brook rises near the top of Sodom Mountain at the Southwick-Granville boundary line, flows southeast and northeast to Munn Brook into which it empties, at a point about a half mile upstream from the Southwick-Westfield boundary line. Sodom Brook is three miles in length and has a total drainage area tributary of three and a half square miles.

About three-quarters of a mile from its mouth, at a point where the drainage area tributary is about three square miles, is a dam belonging to Roy K. Lambson, Southwick, Mass. It is a concrete spillway structure of rather light section forty feet in length and about seven feet in height built in 1919. From its east end a canal runs a couple of hundred feet which connected with a saw and cidernmill no longer in existence, as only the debris of these establishments remain.

The pond formed by the dam is used now as an ice pond and covers about three-quarters of an acre. The dam is in good condition, but even should it fail because of its location and the small size of the pond, no damage would be done by the released water.

JOSEPH BATTISTONI DAM.-- About one and a quarter miles upstream from the Roy K. Lambson dam, at a point where the drainage area contributory is a half square mile, is a dam belonging to Joseph Battistoni, Southwick, Mass.

It is an earthen embankment faced downstream with heavy stone masonry, eighty-four feet in length and sixteen feet in height. At its west end is an overflow eight feet in width. The pond formed by the dam covers about three acres and was built for a pleasure pond and ice pond. The dam is in fair condition except at the east end where there is some leakage which should be repaired. The trees growing in the dam should also be cut down.

SPRINGFIELD

In Springfield there are twenty dams and ten natural ponds. Ten of the dams are on Mill River and its tributaries, three on Pecousic Brook in Forest Park, one on Van Horn Brook, which belongs to the Springfield Park System, one on Lombard Brook, one on Dingle Brook, one on Abbe Brook, two on Bircham Bend Brook, and one on the Chicopee River, the latter, namely the Indian Orchard Company dam which has already been described, with the other dams on the Chicopee River under Chicopee.

The natural ponds are Long Pond, Dimmick Pond, Five Mile Pond, Mona Lake, Loon Pond, Soland Pond, Venturers Pond, Bass Pond, Island Pond, and Harmon Pond.

LONG POND.-- This is located near the north end of Berkshire Avenue, has a surface area of fifteen acres and a drainage area of not over a quarter of a square mile. It has no visible outlet.

DIMMICK POND.-- This is located on the east side of Parker Street, just north of the Boston and Albany Railroad, has a surface area of about six acres; a drainage area of not over one-quarter of a square mile, and no visible outlet.

FIVE MILE POND.-- This body of water is located on the north side of Boston Road between Brandon Avenue and Pine Grove Street. It has a surface area of ninety-six acres and a drainage area of about a half square mile. Like the other ponds mentioned, it has no visible outlet.

MONA LAKE.-- This is located east of Berkshire Avenue just north of the Boston and Albany Railroad. It has a surface area of twenty-six acres, a drainage area of little more than a quarter of a square mile and no visible outlet.

LOON POND.-- This is situated on the north side of Boston Road between Pasco Road and Parker Street. It has a surface area of eighteen acres, a drainage area of less than a half square mile and drains into the north branch of Mill River.

SOLAND POND.-- Soland Pond is situated on the west side of Boston Road between Harding and Hooson Streets. It has a surface area of two or three acres, a drainage area of not more than a quarter of a square mile and drains into Poor Brook, a tributary of the Chicopee River.

VENTURERS POND.-- This is located near the corner of Wilbraham and Plum Tree Roads. It has a surface area of five or six acres, a drainage area of about a half square mile and no visible outlet.

BASE POND.-- This is located on the west side of Parker Street about a half mile north of Sixteen Acre Road. It has a surface area of twenty-two acres, a drainage area of about a quarter square mile, and no visible outlet.

ISLAND POND.-- This is located south of the Water Shops Pond, adjacent to the Island Pond Road. It has a surface area of nine or ten acres, a drainage area of not more than a quarter of a square mile, and no visible outlet.

HARMON POND.-- This is located on the south side of Plum Tree Road about a quarter of a mile from its junction with Allen Street. It has a surface area of five acres and a drainage of about an eighth of a square mile. From it, there is no visible outlet.

FRED J. RICHARDS DAM.-- Mill River is formed by the union of the North and south branches in the Water Shop Pond. The north branch rises in Nine Mile Pond, so called, and flows southwesterly and northwesterly through the town of Wilbraham into and through Springfield to Water Shop Pond.

The south branch rises on the western slope of Wigwam Hill in Wilbraham, flows southwesterly through Wilbraham to East Longmeadow thence northwesterly, and southwesterly through East Longmeadow and Springfield to Water Shop Pond, where it joins the north branch.

Mill River flows southwest from the pond one and a quarter miles to the Connecticut River into which it empties, at a point about one and a quarter miles upstream from the Springfield-Longmeadow boundary line. Its total drainage area is thirty-four and a half square miles.

Ascending the stream, the first dam on Mill River is about eight hundred feet from its mouth and belongs to Fred J. Richards, South Main Street, Springfield, Mass. This is a logrib structure about sixty feet in length and six feet in height. It is not in very good condition as there is settlement in the crest caused apparently by the decaying timber underneath.

The pond, however, formed by the structure, is very small, and in case of failure no material damage would be done by released water. Besides, the structure is in ~~close~~ close proximity to the Connecticut River. If the dam, however, is to be kept in service, it will be to the interest of the owner to have it thoroughly overhauled and repaired as soon as possible. A cotton waste plant is attached to this structure but has been shut down for some time.

BEMIS & CALL HARDWARE COMPANY DAM.-- Upstream about three hundred and fifty feet from the Fred J. Richards dam, last described, at a point where the drainage area is thirty-four and a half square miles is the Bemis & Call Hardware Company dam, South Main Street, Springfield, Mass.

It is a post deck spillway structure, forty feet in length between abutments and ten feet in height. Its foundation is rock ledge. Along its top is laid an apron on top of the ledge in order to prevent erosion of the foundation. The mill is in close proximity to the north end of the dam, from which is laid the penstock to the wheels. Two iron penstocks were laid from the south end of the dam but these have been cut out some time ago. The structure is in fair condition and forms only a small pond.

BAY STATE THREAD WORKS DAM.-- About two hundred and fifty feet upstream from the Bemis & Call Hardware Company dam last described, at a point where the drainage area is thirty-four and a half square miles, is located a dam belonging to the Bay State Thread Works, Springfield, Mass.

This is a concrete spillway structure sixty-five feet in length between abutments and eleven and a half feet in height. It is laid on rock ledge and was constructed in 1919. The pond formed is small, and ^{the} dam is in good condition.

DUCKWORTH CHAIN MANUFACTURING COMPANY DAM.-- Upstream about one hundred and fifty feet from the Bay State Thread Works dam, last described, where the drainage area is thirty-four and a quarter square miles, is a dam belonging to the Duckworth Chain Manufacturing Company, Springfield, Mass.

This is a wooden spillway structure forty-nine feet in length and twelve feet in height backed upstream with earth and silt. The structure is an old one and requires repairing from time to time. According to the company, it is kept under close inspection, and was overhauled and thoroughly repaired about six years ago. It requires some repairing, at present, which, the company stated, would be made next summer in low water. The pond formed by the structure is small and partly filled with silt.

SPRINGFIELD WASTE COMPANY DAM.-- About seven hundred feet upstream from Locust Street, at a point where the drainage area contributory is thirty-four and one-third square miles, is a dam belonging to the Springfield Waste Company, Springfield, Mass.

This is a stone masonry spillway structure of the Ogee type, fifty feet in length and about twenty feet in height. Its north end is the bulkhead in which are the gates of the penstock leading to the mill, which is very closely connected to the dam.

At the south end abutment of the dam, the ledge seems to drop off a few feet, downstream from the toe of the spillway. At this point, there is some erosion of the embankment at the end of the abutment. This erosion should be stopped by extending the abutment or by a heavy stone rip-rap. With this exception, the dam is in good condition.

SPRINGFIELD WEBBING COMPANY DAM.-- Upstream about one thousand feet from the Springfield Waste Company dam, at a point where the drainage area contributory is thirty-four square miles, is located a dam belonging to the Springfield Webbing Company, 235 Mill Street, Springfield, Mass.

It is a stone masonry and concrete spillway structure, the south half being concrete and north half stone masonry. The dam is seventy-five feet in length and twelve feet in height. It is built on ledge, and is in good condition. The pond formed by the dam is small.

U. S. ARMORY WATER POND DAM.-- This dam belongs to the U. S. Armory and forms Water Snop Pond which has a surface area of three hundred and twenty-eight acres and a drainage area of thirty-three and a half square miles. It is a spillway structure one hundred and six feet in length between abutments and twenty-seven feet in height to the crest of the spillway or thirty feet in height to the top of the abutments.

The dam is built of red sandstone sloped on the upstream side and slightly battered probably two feet from the perpendicular on the downstream side. It is laid on ledge and along its toe the ledge is covered with a log apron to protect it from scour or erosion that might in time undermine the toe of the structure.

The dam appears to be in first-class condition, and judging from the few measurements obtained relative to its section, it has a generous factor of safety. The log apron along the toe is showing some wear and part of it, at least, may soon have to be replaced.

GEORGE D. PRATT DAM.-- On the north branch of Mill River about a half mile north of Sixteen Acre Pond and five hundred feet upstream or east of Parker Street, at a point where the drainage area contributory is ten and a half square miles, is a dam belonging to George D. Pratt, Springfield, Mass.

It is an earthen embankment one hundred and fifty feet or thereabouts in length and about seven feet in height. The spillway or overflow is near the center of the structure and built of concrete and stop planks. Its length is thirty-six feet and has an inclined concrete apron covered with planking.

The structure is in fair condition and forms a pond of about four acres which is leased and used exclusively for fishing by the Anglers Club.

BARNEY & BERRY SKATE COMPANY, MILL POND DAM.-- This structure is on the south branch of Mill River on the outlet of Mill Pond in Sixteen Acres, at a point where the drainage area contributory is nine and a half square miles. It belongs, as far as could be ascertained, to the Barney & Berry Skate Company, Springfield, Mass. *see appendix p. 82*

The dam is a dry masonry stone spillway structure fifty feet in length and twelve feet in height laid on a ledge foundation. The dam is not in very good condition, and it is recommended that it be repaired, especially at its north end where the old penstock was located. The pond is thirty-five acres in area and apparently is a natural pond raised by the dam. The water power developed ran a saw and gristmill which were burned down about eighteen years ago. *This dam belongs to J. Stephenson Co., Ch. Falls.*

ANTONIO GAIMARI DAM.-- This dam is located east of State Street near St. Michael's Cemetery on a small tributary to Mill River from the north, at a point where the drainage area is a half square mile and belongs to Antonio Gaimari, Springfield, Mass.

It is an earthen embankment one hundred and sixty-five feet in length, twelve feet in height and from twenty to twenty-five feet wide on top. The overflow is a well located in the pond from which a pipe or culvert extends through the dam below its toe.

The end of this culvert is falling in and should be repaired and cleaned out. The dam proper is in fair condition, and the pond formed by it is about two acres in area and is used as an ice pond.

CITY OF SPRINGFIELD PARK SYSTEM DAMS.-- Three of the dams of the Springfield Park System are located in Forest Park on Pecousic Brook (described under East Longmeadow) near its mouth where the drainage area is six and a third square miles, and one on Van Horn Brook which forms the Van Horn Reservoir, formerly a part of the water works of the City of Springfield.

The dams are all earthen embankments. It is unnecessary to go into any details about these structures beyond stating that they are in good condition and under the direct supervision of the officials of the City of Springfield Park Department.

CITY OF SPRINGFIELD WATER WORKS.-- Lombard Reservoir dam is located at the south end of Kendall Street near the Boston and Albany Railroad and has a drainage area contributory of about a quarter of a square mile.

The dam forming the reservoir is one hundred and ninety feet in length and twenty feet in height. The reservoir which covered about one and a half acres has not been used by the City of Springfield for some time and was drawn down and emptied. It is, at present, being filled in with earth. Therefore, no future inspection of it will be necessary.

PETER HOGAN DAM.-- This structure is on Dingle Brook (described under Chicopee, relative to the Chicopee Electric Lighting Station). About a mile upstream from its mouth or four hundred feet south of Liberty Street, at a point where the drainage area contributory is a third of a square mile, is located a dam belonging to Peter Hogan, Woodmont Street, Springfield, Mass.

It is an earthen embankment one hundred and twenty-five feet in length and ten feet in height. Its width on top is fourteen feet, and it carries a driveway. The overflow is through the dam about twenty feet from its south end and is a ten inch vertical pipe connected with a twelve inch pipe laid horizontally through the dam. The pond formed by the dam is an ice pond that covers about a acre. Near the south end of the structure there is some leakage and it is recommended that this be stopped and that a surface overflow of some kind be attached to the structure.

CHICOPEE WATER WORKS DAM.-- Abbe Brook is a tributary from the west of Dingle Brook into which it empties about two hundred feet downstream from the Hogan dam, last described. On this brook about eight hundred feet upstream from its mouth, at a point where the drainage area contributory is three-quarters of a square mile, is the Abbe Reservoir dam which belongs to the City of Chicopee. It forms a reservoir having a surface area of about three and a half acres.

The dam is an earthen embankment two hundred and ten feet in length, thirteen feet in height, and twelve feet wide on top. There is a gate house located in the reservoir at the foot of the upstream face of the dam, from which is laid a circular brick conduit two feet in diameter through the dam.

The discharge from the reservoir through this conduit is regulated by stop pianks. While the conduit appears to have sufficient discharging capacity, nevertheless, to increase the factor of safety against flood flow topping the structure, it is recommended that a surface overflow or swale, located at the most convenient place, be added to the structure. The reservoir, apparently, while it belongs to the City of Chicopee, is not, it appears, used now as any part of the source of supply of the city.

EDWARD FITZGERALD DAM NO. 1.-- There are two dams on Birnam Bend Brook, a tributary of Chicopee River into which it empties from the south at Birnam Bend. The first dam is located about a quarter of a mile upstream from its mouth where the drainage area contributory is about three-quarters of a square mile and belongs to Edward Fitzgerald, Indian Orchard, Mass.

This structure is an earthen embankment three hundred feet in length, thirteen feet in height, and nine feet wide on its top. The overflow, which is one hundred and twenty-five feet from the south end of the structure, is twelve feet in length with its crest five feet below the top of the dam.

The structure has been built about five years, and is in good condition. It forms a pond of about four acres in area, which is used as a fishing pond, and is leased to the Birnam Fly Club.

EDWARD FITZGERALD DAM NO. 2.-- About a half a mile upstream and across the railroad from the Fitzgerald dam No. 1, last described, at a point where the drainage area contributory is a half square mile, is another dam belonging to Edward Fitzgerald, Indian Orchard, Massachusetts.

This structure is an earthen embankment one hundred and sixty-one feet in length, thirteen feet in height, and fourteen feet wide on top. The overflow of the structure is built of concrete ten feet in length with its crest four feet below the top of the dam. The structure which forms a pond

six acres in area, shows some seepage along its toe which the owner stated he would have repaired the coming summer.

TOLLAND

There are nine dams and two natural ponds in the town of Tolland. Of the dams, one is on the west branch of the Farmington River, one on Snow Brook, one on Twining Brook, one on Trout Brook, two on Larkin Brook, one on Taylors Brook, one on Hubbard River, and one on Pond Brook. The two natural ponds are Hall Pond and Cranberry Pond.

HALL POND.-- Hall Pond is situated about two miles northeast of Tolland Center on the headwaters of Hubbard River into which it drains, covers about thirty-three acres and has a drainage area contributory of a half a square mile.

CRANBERRY POND.-- Cranberry Pond is located about one and a half miles southeast of Tolland Center on the headwaters of Cranberry Brook, covers seventeen acres and has a drainage area contributory of a little over a half square mile.

JULIUS A. VERCHOT DAM.-- The Farmington River rises in the town of Becket and pursues a southerly course through Otis, Tolland and Sandisfield to the Massachusetts-Connecticut boundary line, thence across Connecticut to Windsor at which point it empties into the Connecticut River. Its total length is seventy-five miles and total drainage area about six hundred square miles. In Massachusetts, its length from its source to the Connecticut line is seventeen miles, and its drainage area is one hundred and three square miles at the same point.

About five hundred feet upstream from the Massachusetts-Connecticut line, at a point where the drainage area contributory is one hundred and three square miles, is a dam belonging to J. A. Verchot, Riverton, Connecticut, R. F. D. This is only a diversion dam built of boulders and cobblestone in rip-rap fashion. It is one hundred and fifty feet in length, three feet in height and is used for diverting water into a canal five hundred feet in length which leads to a cider and sawmill below. Inasmuch as the structure forms no pondage to speak of and that no damage from its failure would be caused by released water, no future inspection of it will be necessary.

W. A. GARIGUE DAM.-- Snow Brook is a small tributary of Farmington River from the west into which it empties about two and a quarter miles downstream from the Tolland-Otis boundary line. About a half mile from the mouth and three miles northwest of Tolland Center, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging to W. A. Garigue, Plainfield, N. J.

It is an earthen embankment faced downstream with dry stone masonry, two hundred and sixty-five feet in length, nine feet in height and ten feet wide on its top. The spillway or overflow is in the center of the structure, is twenty feet in length and divided into three bays in which are stop planks for regulating the height of the pond behind the structure. This spillway is built of wood and is in poor condition, especially the wood work supporting the embankment at both its ends, which is rotting out and thus allowing the embankment to fall in.

The pond formed by the dam covers about six acres, and, until ten years ago, power was developed at this place which ran a saw and cidermill. Only the traces of these establishments, however, remain. If the pond is to be maintained, it is recommended that the dam be repaired. Otherwise, that the pond be lowered.

FRANK B. DEEMING DAM NO. 1.-- Twining Brook rises on the west slope of Noyes Hill and flows southwest through Tolland into Sandisfield to the west branch of the Farmington River into which it empties about a mile downstream from New Boston. It is two and a half miles in length and has a total drainage area of two square miles. Upstream about one and three-quarters miles from its mouth, at a point where the drainage area contributory is about a square mile, is a dam belonging to Frank B. Deeming, New Boston, Mass.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and nine feet in height. Its spillway or overflow is a plank sluice way located at its west end and is six feet in length. The pond formed by the structure is about ten acres in area, is known as Twining Pond, and is used as a storage to feed a sawmill downstream.

The dam is not in very good condition and the breaches in the downstream face should be repaired by putting the stonework back in place. The debris accumulated at or around the spillway toe should be removed.

FRANK B. DEEMING DAM NO. 2.-- Trout Brook is a tributary of Twining Brook into which it empties from the east. At a point on this tributary about a half a mile upstream from its mouth where the drainage area is one-tenth of a square mile, is another dam belonging to F. B. Deeming, New Boston, Mass.

The structure is a gravel embankment faced up and downstream with dry stone masonry. It is one hundred feet in length, nine feet in height, and ten feet wide on its top. The overflow is outside the dam and built of wood. This structure is not in good condition, and it is recommended that it be repaired, especially the breach in its downstream side at or near its center. The pond formed by the dam is known as Trout Pond and is about two acres in area.

E. T. PALMENBERG DAM NO. 1.-- Larkin Brook rises in the northeast corner of Colorook, Connecticut, flows northwesterly into and through Tolland to Slocum Brook into which it empties near the junction of Slocum, Taylors and Cranberry Brooks. It is about one and a quarter miles in length and has a total drainage area of only a half square mile.

At a point two hundred feet upstream from its mouth where the drainage area contributory is practically the total drainage area of the stream, namely a half square mile is a dam belonging to E. T. Palmenberg, Riverton, Connecticut. It is an earthen embankment faced downstream with stone eighty feet in length and nine feet in height. Part of the structure, however, is gone out, and since there is no obstruction to the free passage of the water, no future inspection of it will be necessary. It is recommended, however, that the brook be cleaned of debris which has accumulated where the breach is in the structure.

E. T. PALMENBERG DAM NO. 2.-- The other dam on Larkin Brook in Tolland is about fifteen hundred feet upstream from the E. T. Palmenberg dam No. 1, last described, at a point where the drainage area contributory is somewhat less than a half square mile and belongs also to E. T. Palmenberg, Riverton, Connecticut.

It is an earthen embankment two hundred and thirty-four feet in length and eight feet in height, and eleven feet wide on top. Its spillway is located one hundred and sixty feet from the north end of the dam, is five and a half feet in length with its crest six inches below the top of the dam. The pond formed by this structure covers about thirty acres and is leased to the Tolland Fishing and Game Club. While the dam is in fair condition, nevertheless, to increase its factor of safety against flood flow topping the structure, it is recommended that the top of the embankment be raised at least one and a half feet above the crest of the spillway.

GEORGE CLARK DAM.-- Taylors Brook rises one mile northwest of Tolland Center, flows south a distance of three miles to its junction with Slocum and Granberry Brooks. Its total drainage area is about four square miles.

Upstream three-quarters of a mile from its mouth, at a point where the drainage area contributory is three and a half square miles, is or was located a sawmill dam belonging to George Clark, Colbrook, Connecticut. As only traces of the structure remain, no future inspection of it will be necessary.

WILLIAM COOLEY DAM.-- On Hubbard River (described under Granville), at a point near the Tolland-Granville boundary line, where the drainage area contributory is nine and a half square miles, is a dam belonging to William Cooley, Granville, Mass.

It is a spillway log structure one hundred and thirty feet in length and seven feet in height. It is used as a diversion dam to turn water into a canal which conveys water to the wheels located in the mill below along the highway. The structure is a derelict being abandoned some years ago, and since it does not obstruct the flow of the brook or form any pond, no future inspection of it will be necessary.

TUNNIS H. F. O. CLUB DAM.-- Noyes Pond is a large natural body of water raised by a dam located about two miles northwest of Tolland Center, and drains through Pond Brook into Hubbard River. Its surface area covers one hundred and eighty-one acres and its drainage area one and a half square miles.

At its outlet is a dam built of dry stone and earth two hundred feet in length and seven feet in height. There is a spillway in the center of the structure three feet in length and a surface overflow at its north end which is eighteen feet in length. Formerly the pond was used as a storage and feeder to the small sawmill pond two hundred feet downstream. The dam is a safe structure and is in fair condition.

*See also Tolland River for other dams
Jan. 1, 1915, 1916, 1917.*

WALES

In the town of Wales there are thirteen dams, eight of which are on Wales Brook, one on a tributary to Wales Brook, two on Conant Brook, and two on Hollow Brook.

Wales Brook rises in the town of Wales about a mile southeast of Wales Pond, flows northwest and north into and through Brimfield where it joins Mill Brook, at a point about three-quarters of a mile southeast of Brimfield Center. It is five and a half miles in length and has a total drainage area of six and a half⁵⁹ miles.

LEON H. THOMPSON DAM.-- At a point about a half mile upstream from the Wales-Brimfield boundary line or about one and a half miles northeast of Wales Center, at a point where the drainage area contributory is four and a half square miles, is a dam which belongs to Leon H. Thompson, Wales, Mass.

This was an old sawmill dam built of earth and abandoned years ago. It is now breached, forms no pond, nor offers any obstruction to the free flow of the brook. Therefore, no future inspection of it will be necessary.

H. P. MARCY & COMPANY DAM.-- About a half mile upstream from the Leon H. Thompson dam, at a point where the drainage area contributory is three and a half square miles, is a dam which now or formerly belonged to H. P. Marcy & Company.

This structure was a small diversion dam which has been abandoned years ago. The central part of the structure is gone out and for this reason, offers no obstruction to the flow of the brook. No future inspection of it will be necessary.

WALES WOOLEN MILL DAM.-- Upstream two thousand feet from the last described dam, at a point where the drainage area contributory is three square miles, is a dam belonging to the Wales Woollen Mill Company which employs about one hundred hands.

This is a concrete structure fifty feet in length and twelve feet in height. The spillway is in the middle of the structure and is ten feet in length with its crest three feet below the top of the dam. From the end of the structure there extends upstream, for a distance of sixty feet or thereabouts along the highway, an earthen embankment or dike.

The pond formed by the dam is very small. From it is laid a canal that conveys the water to the mill below. This water is not used for developing power but for fire protection and washing purposes being first pumped into an artificial reservoir built on the higher ground adjacent to the mill. The dam is in good condition, but ^{the} dike requires some minor repairs which were pointed out to the company when the structure was inspected.

MAPLE VALLEY WOOLEN MILL DAM.-- Upstream seven hundred feet above the Wales Woollen Mill dam, last described, at a point in the brook where the drainage area contributory is two and three-quarters square miles, is a dam belonging now or formerly to A. & E. D. Shaw, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth one hundred feet in length and fourteen feet in height. Part of the structure has now gone out and since there is no pond formed, nor any obstruction to the stream, no future inspection of it will be necessary.

BELL MANUFACTURING COMPANY DAM.-- The fifth dam on the brook is located about one thousand feet upstream from the Maple Valley Woollen Mill dam, last described, at a point where the drainage area contributory is a little less than two and three-quarters square miles and belongs now or formerly to the Bell Manufacturing Company, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth fifty feet in length, eight feet in height, and carries a driveway on its top. It was used as a diversion dam from which a canal was laid about seven hundred feet in length to the Woollen Mill below. The mill was burned down some years ago, and never rebuilt. The dam is in fair condition, and forms but a very small pond.

SHAW MANUFACTURING COMPANY DAM.-- About five hundred feet upstream from the Bell Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a half square miles, is a dam which now or formerly belonged to the Shaw Manufacturing Company, Wales, Mass.

It is about one hundred feet in length, fifteen feet in height and carries the highway on its top. At the southeast end of the structure is located the spillway which is built on the downstream side of the highway. It is sixteen feet in length with its crest six feet below the top of the dam or the surface of the highway.

The highway is carried over the channel of approach to the spillway by a wooden bridge. The pond formed by the structure is about five acres in area from which a pipe or penstock is laid across the highway and downstream to the woolen mill below which is no longer a going concern. The dam is in good condition.

ERNEST L. NEEDHAM DAM.-- The seventh dam on the Wales Brook from its mouth is in Wales Center about two thousand feet upstream from the Shaw Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a quarter square miles and belongs to Ernest L. Needham, Wales, Mass.

It is an earthen structure faced downstream with dry stone masonry. Its length is sixty feet and its height seven feet with its spillway in the center of the structure. There is a sluice way on the south end of the overflow two and a half feet wide and four and a half feet deep. The spillway is thirteen feet in width planked upstream. The sluice way is not in very good condition, and if the structure is to be maintained, it should be repaired.

From the small pond formed by the structure a canal is laid across the highway which connects with the mill downstream. This, until about sixty years ago, was a woolen mill, and since then a sawmill, which, in recent years, is operated only intermittently. It is the oldest mill in the town, and the building as it stands today, was constructed in 1823. The dam was built about a hundred years ago.

WALES POND DAM.-- The eighth and last dam on Wales Brook from its mouth, is across the outlet of Wales Pond and appears to be under the supervision of the state or town authorities, as it is part of the state highway. In the pond adjacent to the highway, a spillway and gate house are constructed from which a culvert is laid through the highway.

In the gate house, there are stop planks and apparatus for regulating the height of the pond except in times of high water which discharges directly over the spillway into the culvert laid through the highway. The arrangement is a safe one. The pond covers about seventy-seven acres, has a drainage area contributory of one and a half square miles and is a natural pond raised by the dam.

J. M. SQUIER DAM.-- This structure is located about a half mile from Wales Center on the road to Monson across a small tributary to Wales Brook from the west, at a point where the drainage area contributory is less than one-tenth of a square mile and belongs to J. M. Squier, Wales, Mass.

The length of the structure which is also the highway is about one hundred and seventy feet and its height six feet. The pond formed covers about three or four acres or probably, with the swamp land around it, six acres, and is used as a fishing pond. The spillway is a well with stop plank arranged therein over which the water flows into the well from which a culvert extends through the highway.

The water in the pond is lower than the surface of the highway, and therefore, there is very little danger of the water in flood flows topping the highway. The mouth of the culvert, however, on the downstream side of the highway is partly filled with stones and earth which have tumbled down from the retaining wall supporting the highway.

It is recommended that this debris be removed and the mouth of the culvert cleared. It is also recommended that the stop plank spillway over which the water passes into the well and culvert, be enlarged.

WILLY M. PECK DAM.-- At a point on Conant Brook (described under Monson), about a half mile upstream from the Wales-Monson boundary line or three miles southwest of Wales Center where the drainage area contributory is two square miles, is a dam belonging to Willy M. Peck, Monson Mass., R. F. D. No. 2.

This is an earthen embankment faced downstream with dry stone masonry. It is one hundred and sixty-five feet in length, twelve feet in height, and seven feet wide on top. The overflow is twelve feet in length with its crest one foot below the top of the dam. The pond formed by the structure is about three acres and the water power developed ran some years ago, a shingle mill and afterwards a cidermill. For the past three years, however, the cidermill has not been operated and is abandoned.

This water privilege has been in the Peck family for over one hundred years and the homestead in which Mr. Peck lives is two hundred years old. On account of the dam being abandoned, it is not in very good condition, and if it is to be maintained in the future, it is recommended that the spillway be properly repaired, the top of the embankment should be raised to at least two feet above the crest of the spillway, and the tree at the west end of the overflow cut down. If repairs are not made the pond should be lowered.

EVERETT E. BRADLEY DAM.-- Upstream about one and a half miles from the Willy M. Peck dam, last described, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging to Everett E. Bradley, Wales, Mass.

It is located on the outlet of Vineca Pond, so called, which is apparently a natural pond raised by the dam. The dam is an earthen embankment about one hundred and fifty feet in length and five feet in height faced with dry rubblestone. Because of a breach in the structure, it backs up no water, and the pond appears to be in its natural state. For this reason, no future inspection of the dam will be necessary.

A. D. BRAMBLE DAMS.-- There are two dams on Hollow Brook both of which belong to A. D. Bramble, Palmer, Mass. Hollow Brook rises in the town of Wales about one mile southwest of Wales Center, flows northerly through Wales and Brimfield to Charles Brook which it joins to form Mill Brook at a point about a mile southwest of Brimfield.

Hollow Brook is four miles in length and has a total drainage area of three and a half square miles. The two dams above mentioned are located in close proximity to each other, at a point about a mile northeast of Wales Center and fifteen hundred feet upstream from the Wales-Brimfield boundary line, where the drainage area contributory is one and a quarter square miles.

The lower dam is a wooden structure built of logs, posts and planking one hundred and sixty feet in length and about six feet in height. The pond formed by this structure is very small, and in case of failure, no material damage would be done by the released water.

The other dam three hundred feet upstream is an earthen embankment one hundred and thirty feet in length, seven and a half feet in height, and carries a driveway on its top. The overflow is built of cobblestone with a six inch by six inch wood beam laid thereon to form the crest. There is a considerable leakage in the structure especially at a point about twenty-five feet from its west end.

If the dam is to be maintained this leakage should be repaired and the spillway put in better condition. As the pond formed, however, is shallow and only about a half an acre in area it is not likely that any material damage would be done in case of failure of the structure by the released water, except

possibly to the other dam belonging to Mr. Bramble located three hundred feet below. The dam in question was built about four years ago, and the one below it, last year, both to form fishing ponds.

WESTFIELD

There are eighteen dams and three natural ponds in Westfield. Of the dams, one is on the Westfield River, known as the Westfield River Realty Trust dam which is described with the other dams on the Westfield River under West Springfield, four on Westfield Little River, one on Ashley Brook, one on Munn Brook, one on a tributary of the Westfield Little River at West Parish, connected with City of Springfield Water Works filter beds, three on Great Brook, two on Pond Brook, three on Powder Mill Brook, one on a tributary to Powder Mill Brook, and one on Moose Meadow Brook.

NATURAL PONDS.-- The three natural ponds are Hampden Pond, Horse Pond, and Buck Pond, all of which are located in close proximity to each other in the northwest corner of Westfield. They drain into Pond Brook, and thence into the Westfield River by the way of Powder Mill Brook.

HAMPDEN POND.-- Hampden Pond covers one hundred and forty-nine acres and has a total drainage area of two and a quarter square miles.

HORSE POND.-- Horse Pond covers thirty-four acres and has a total drainage area of about three square miles.

BUCK POND.-- Buck Pond covers twenty acres and has a drainage area of three and a third square mile. None of these ponds have been raised by a dam.

FOSTER MACHINE COMPANY DAM.-- On Westfield Little River (described under Russell), at a point about two miles upstream from its mouth where the drainage area is eighty-two square miles, is located the Foster Machine Company dam.

This is a crib dam backed with gravel. It is two hundred and ninety-seven feet in length between abutments slightly less than six feet in height above the mud sill and is aproned downstream. The bulkhead is located at the north end of the dam from which a canal extends to the Foster Machine Company shops about one thousand feet downstream.

There is some leakage around the bulkhead which should be repaired, and some of the planking in the apron should be renewed. Otherwise, the structure is in fair condition for one of its type and age.

Because of the low height of the structure, the volume of the pondage formed is not large, and in case of a failure of the structure, it does not appear that any material damage would be done by the released water.

CRANE & COMPANY DAM.-- Upstream about three thousand feet from the Foster Machine Company dam, last described, is located the second dam on the Westfield Little River, at a point where the drainage area contributory is eighty-one square miles and belongs to Crane & Company, Westfield, Mass.

This is a stone masonry spillway structure laid on a ledge foundation two hundred feet in length and twenty feet in height between abutments with the crest of the spillway nine and a half feet below the top of the abutments. An earth embankment extends from the north end abutment for a distance

of two hundred and eighty feet at which point is located the headgates and penstock laid to the mill which is built along the foot of the embankment. The structure is in good condition and water tight, except at one point about fifty feet from its north end where there is a small leak through the masonry about a foot above the ledge foundation, and at another point in the retaining wall downstream from the north end of the spillway.

While these leaks are not serious at present, it will be better to have them repaired. Repairs also should be made on the stone work of the retaining wall and jamb of the abutment by resetting some of the stones and pointing with cement mortar. The pondage formed by the dam covers thirty-six acres.

MARS PAPER COMPANY DAM.-- Upstream about a mile from the Crane & Company dam, last described, at a point where the drainage area contributory is seventy-eight square miles, is the third dam on the Westfield Little River and belongs to the Mars Paper Company, Westfield, Mass.

It formerly belonged to Crane Brothers. The dam is a stone masonry spillway structure built of hard red sandstone laid on a ledge foundation one hundred and fifty feet in length and fourteen feet in height with its spillway six and a half feet below the top of the abutments.

The dam is in good condition and was built in 1901 to replace a log dam. The pond formed is long and narrow as the structure backs water a considerable distance upstream. Its area is not known and rather large to estimate.

WESTFIELD GREEN MARBLE WORKS DAM.-- This structure was located at a point about fifteen hundred feet downstream from the Westfield-Russell boundary line where the drainage area contributory is fifty-two square miles. Inasmuch as the greater part of the structure has gone out, no future inspection of it will be necessary.

LEWIS FULLER DAM.-- Ashley Brook is a tributary of the Westfield Little River into which it empties from the south at the upstream end of the pond formed by the Crane & Company dam.

At a point about a mile upstream from its mouth where the drainage area contributory is only a quarter square mile, is a dam belonging to Lewis Fuller, Westfield, Mass. It was built to form an ice pond. The structure failed about six years ago, and as it forms no pond now nor obstructs the natural flow of the brook, no future inspection of it will be necessary.

THE OSDEN DAM, SO CALLED.-- Munn Brook is formed in the town of Granville at the foot of Sodom Mountain by the union of Dickinson and Tillotson Brooks, flows southeast and northeast through the towns of Granville and Southwick into Westfield to the Westfield Little River into which it empties about a half mile upstream from the Mars Paper Company dam. It is four and a half miles in length and has a total drainage area of twenty-one and a half square miles.

Upstream about fifteen hundred feet from its mouth, at a point where the drainage area contributory is practically the total drainage area of the brook, that is, twenty-one and a half square miles, the Osden dam was located. Inasmuch as only traces of the structure now remain, no future inspection of it will be necessary.

CITY OF SPRINGFIELD WATER WORKS SEDIMENTATION RESERVOIR DAM.-- This dam is located at the filter beds in West Parish and is one of the structures in the Springfield Water Works Little River System already referred to under Russell.

S. SALOOMY DAM.-- About one thousand feet upstream from the mouth of Great Brook (described under Southwick), at a point where the drainage area is twenty-five and a quarter square miles, is a dam belonging to S. Salomey, Westfield, Mass.

It is a post deck spillway structure over which the highway is carried by a bridge. The length of the spillway is fifty-five feet and its height eleven feet with the crest six feet below the floor of the bridge. A penstock extends from each end of the dam, one on the west side of the stream to a gristmill, and one on the east side to a sawmill. The gristmill was burned down about three years ago, and the sawmill is still in operation in an intermittent way.

The pond formed by the structure is about two acres. There is some leakage through the structure especially around the penstock which is laid to the gristmill, and near its center where the waste gate, for emptying the pond, is located. The owner stated he would repair these leaks and the whole structure the coming year.

UNITED STATES WHIP COMPANY DAM.-- Upstream about twelve hundred feet from the S. Salomey dam, last described, at a point in the brook where the drainage area contributory is twenty-five square miles, is located a dam belonging to the United States Whip company, Westfield, Mass.

This is only a small structure built of loose stones or rip-rap. It is about seventy feet in length and not over four feet in height. It was built as a diversion dam to turn water into a canal that connected with a tannery about one thousand feet below. Inasmuch as the pond formed by the structure is next to nothing, no future inspection of it will be necessary.

WELLS LOOMIS DAM.-- Ascending the stream the last dam on Great Brook in Westfield is located about a half a mile upstream from the U. S. Whip Company dam, last described, at a point where the drainage area contributory is twenty-four square miles and belongs to Wells Loomis.

To the structure, in former years, was attached a powder mill which has gone out of existence long ago, and as only traces of the dam remain, no future inspection of it will be necessary.

WILLIAM CUNNINGHAM DAM NO. 1.-- Pond Brook rises in the Hampden Ponds in the northeast corner of Westfield, flows south and southwesterly to Powder Mill Brook into which it empties about a mile upstream from the mouth of the latter. Pond Brook is five miles in length and has a total drainage area of eight and a half square miles.

At a point about three-quarters of a mile upstream from its mouth two miles northeast of the center of the City of Westfield where the drainage area contributory is seven and three-quarters square miles, is a dam belonging to William Cunningham (address Booth & Co. Ltd., 17 Beacon St. New York,) and formerly to the Springdale Paper Company.

It is a masonry spillway structure twenty-five feet in length and eight feet in height above the horizontal plank apron laid along the toe of the spillway. The crest of the spillway is five feet below the top of the abutments. The east abutment is in poor condition as the masonry therein has settled and is cracked.

It is recommended that this abutment be repaired and that the apron be replanked where needed. The pond formed by the structure is not over three acres in area from which extends a canal three thousand feet or thereabouts in length to the mill downstream. A very high head is developed by this arrangement. The mill is now shut down and has not been in operation for some time.

WILLIAM CUNNINGHAM (BOOTH & CO. LTD.) DAM NO. 2.-- The second dam on Pond Brook is located about two miles upstream from the dam last described in the Owen district, so called, at a point where the drainage area is very little over four square miles. It forms a storage pond which covers ten or twelve acres. The storage was used in the past as a feeder to the millpond of the Springdale Paper Co. who, it seems, owned or controlled the pond. If this has been the case, since the Springdale Paper Co. property has passed into the hands of William Cunningham, it is assumed that it is he who now owns and controls the pond.

The dam is an earthen structure two hundred and twenty feet in length and thirteen feet in height. It is nine feet wide on top and carries a private driveway. The overflow is at its east end and is a canal or channel which extends downstream for some distance. The channel is eight feet in width and its bottom, where it passes through the dam, is five feet below the top of the embankment or the floor of the driveway bridge crossing at this point.

The dam, which appears as if it is an abandoned structure, requires some repairs in the way of levelling up the top of the embankment to its original height etc., but it is recommended especially that the overflow channel be cleaned and all the debris therein removed; also the growth of brush at and around its entrance cut down and the narrow approach to the entrance widened and deepened.

MRS. JAMES FOWLER DAM.-- There are three dams on Powder Mill Brook. This brook rises about a mile southeast of Montgomery Center, flows southeasterly a distance of seven and a half miles to the Westfield River into which it empties a short distance below the mouth of the Westfield Little River. Its total drainage area is twenty square miles.

Upstream about one and a half miles from its mouth, at a point where the drainage area contributory is ten and three-quarters square miles, is a sawmill dam belonging to Mrs. James Fowler, Westfield, Mass. The dam is the highway in which a spillway is built with a bridge over it. The height of the spillway is seven feet above the bed of the brook, with its crest four feet below the flooring of the bridge. From its south end a canal extends a couple of hundred feet along the highway and thence under the highway to the sawmill below.

The sawmill is operated only in the spring season and not in the summer. Inasmuch as there is hardly any pond formed and that the dam is the highway in charge of the City of Westfield, no future inspection of the structure will be necessary.

J. C. BUSCHMAN SONS TOBACCO COMPANY DAM.-- About three-quarters of a mile upstream from the Fowler dam, last described, or about three hundred feet west of North Elm Street, at a point where the drainage area contributory is nine and three-quarters square miles, is a dam belonging to J. C. Buschman Sons Tobacco Company, Westfield, Mass.

This dam is an earthen embankment with a stone masonry spillway built towards its east end. It is three hundred and ninety feet in length and twenty-seven and a half feet in height. The spillway is fifty feet in length and twenty feet in height with its crest seven and a half feet below the top of the embankment and is built of logs for a depth of four feet capped with planking.

Along the toe of the spillway is laid a horizontal apron built of wood twenty feet in width. The pond formed by the structure covers about eight acres and is an ice pond. The dam is in fair condition except for some erosion in the embankment at each end of the spillway. At these points the embankment should be filled in with gravel, and the trees growing on the up-

stream side of the dam cut down. The apron along the toe of the spillway should be replanked where some of the planking has been carried away or worn off, and the crest of the spillway cleared of the logs and debris accumulated thereon. Formerly there was a gin distillery attached to this dam and pond.

ROOKWELL & MOSELEY DAM.-- Upstream about three-quarters of a mile from the J. C. Busceman Sons Tobacco Company dam, at a point where the drainage area contributory is five and a half square miles, is an abandoned structure which now or formerly belonged to Rookwell and Moseley, Westfield, Mass.

It is an earthen structure two hundred and seventy feet in length and ten feet in height to which a powder mill was attached. Inasmuch as the greater part of the structure has gone out, no future inspection of it will be necessary.

ANDREW TEOMBICK DAM.-- On a small tributary of Powder Mill Brook from the west into which it empties about fifteen hundred feet upstream from the Rookwell & Moseley dam, last described, is a dam belonging to Andrew Tecmbick. This is located about seven hundred feet from the mouth of the tributary, at a point where the drainage area is three-quarters of a square mile. The structure to which was once attached a cotton waste mill, has gone out years ago, and no future inspection of it will be necessary.

JOSEPH BOYSSEAU DAM.-- The dam on Moose Meadow Brook (described under Montgomery) is located about a mile upstream from its mouth where the drainage area contributory is five and three-quarters square miles and belongs to Joseph Boysseau, Westfield, Mass.

To the structure was attached a sawmill which went out of existence thirty-five years ago. In recent years the pond formed by the dam was used as an ice pond until the great flood of April 7, 1924 carried part of the dam away and thus emptied the pond. Inasmuch as the rupture has not been repaired, no future inspection of the structure will be necessary.

WEST SPRINGFIELD

In the town of West Springfield there are fourteen dams two of which are on Darby brook, one on Bagg Brook, three on Wolf Swamp Brook, one on Block Brook, four on Black or Bear Hole Brook, and three on the Westfield River.

Darby Brook rises in the town of West Springfield near the east end of Oak Court, flows easterly to the Connecticut River into which it empties near the corner of Elm and Riverdale Streets. It is about one and a quarter miles in length and has a total drainage area of three-quarters of a square mile.

PETER FOSSA DAM.-- About one thousand feet upstream from its mouth near the southerly side of Riverdale Street and the westerly side of Elm Street, at a point where the drainage area contributory is about a half square mile, is a dam belonging to Peter Fossa, and formerly to Harrison Loomis.

The dam is an earthen embankment two hundred and fifty feet in length and eleven feet in height. It has no overflow except two pipes through the structure, one controlled by a gate and the other with stop planks, both operated as headgates.

In order to increase the factor of safety of the structure against flood flow topping the dam, it is recommended that a surface overflow in the form of a paved swale or gutter be placed near or at the end of the dam. The owner, when the matter was explained to him, saw that if such were done, it would increase the safety of the structure. The pond formed by the structure covers one and a half acres and is used as a ice pond in connection with an ice cream establishment.

WEST SPRINGFIELD WATER WORKS DAM.-- Upstream about a half mile from the Fossa dam, last described, at Piper Street, at a point where the drainage area tributary is a little less than a half square mile is a dam belonging to the town of West Springfield Water Works.

This is an earthen embankment which carries on its top the highway. It is three hundred and thirty-five feet in length and about fourteen feet in height. The reservoir formed by the structure covers about four acres from which there is no spillway except a pipe through the ^{dam} twelve inches in diameter.

Inasmuch as this pipe has been sufficient to discharge the waste water of the reservoir in the most intense flood flows that have occurred within the last fifty years or since the dam was built, a surface overflow, it appears, is unnecessary.

At a point about seventy feet south from the north end of the dam, there seems to be some seepage on the downstream side of the structure. As the seepage, however, is at a point in elevation very little below the surface of the reservoir, it is not very material. Outside of this, the dam seems to be a water-tight structure.

FRANK KNEIP DAM.-- Bagg Brook rises in West Springfield on the southeast slope of Prospect Hill, flows southwesterly a distance of two miles to the Connecticut River into which it empties a half mile upstream from the mouth of Darby Brook. Its total drainage area is two square miles.

About three-quarters of a mile upstream from its mouth in the triangle formed by Piper Street, Morgan Road, and Cayenne Street, at a point where the drainage area tributary is a square mile, is located a dam belonging to Frank Kneip, 53 Cayenne Street, West Springfield, Mass.

The dam is a very small structure which forms a shallow ice pond that covers not over one-third of an acre. For this reason, no future inspection of the structure will be necessary, because even should it fail, no damage would be done by the released water. If, however, it is to the interest of the owner to maintain the pond, the dam should be repaired around the spillway and the embankment raised another foot above the crest of the spillway.

SPRINGFIELD COUNTRY CLUB DAM.-- There are three dams on Wolf Swamp Brook, which is a tributary of Bagg Brook, from the south and into which it empties about a quarter of a mile upstream from the mouth of Bagg Brook. The first dam on Wolf Swamp Brook is about one thousand feet upstream from its mouth on the Country Club Road, at a point where the drainage area tributary is three-quarters of a square mile and belongs to the Springfield Country Club.

The dam is an earthen embankment two hundred and sixty feet in length and fifteen feet in height. It is faced upstream with a concrete wall. Its overflow is located sixty feet from its north end and is a concrete well with stop planks fashioned therein for controlling the flowage of the pond. The width of the overflow is five feet and the stop planks are three and a half feet in height. From the bottom of the well is laid through the dam a two foot pipe, and from the top a culvert five feet wide and three feet high. The pond formed by the structure is ten acres, and the structure is in fair condition.

FELIX LYNCOSEY DAM.-- The second dam on Wolf Swamp Brook is about a half mile upstream from the Springfield Country Club dam, last described, at a point where the drainage area contributory is somewhat less than a half square mile and belongs to Felix Lyncosey, 573 Piper Road, West Springfield, Mass.

The dam is an earthen embankment about one hundred and twenty feet in length, five and a half feet in height and eight feet wide on top. The pond formed by the structure covers about a half acre and is an ice pond. The dam is in fair condition but because of the small capacity and location of the pond, even should it fail, no material damage would be done by the released water.

SPRINGFIELD ICE COMPANY DAM.-- The third and last dam on Wolf Swamp Brook is located about five hundred feet upstream from the Lyncosey dam, last described, at a point where the drainage area contributory is about one third of a square mile and belongs to the Springfield Ice Company, Springfield, Mass.

This is an earthen embankment one hundred and forty feet in length, seven feet in height and eight feet wide on its top. Its spillway is at its ~~east~~ west end, and is five feet in width with its crest two feet below the top of the dam. The pond formed by the structure is three and a half acres, and is used as an ice pond. The dam is in good condition.

ALLEN BROTHERS DAM.-- This structure is located on the headwaters of Black Brook about four hundred feet north of Dewey Street, at a point where the drainage area contributory is not more than a half square mile and belongs to the Allen Brothers, Amostown Rd., West Springfield, Mass.

The dam is an earthen embankment one hundred and fourteen feet in length and eight feet in height. It is faced on its upstream side with dry stone and on its downstream side with a concrete wall fourteen inches in thickness. The spillway is in the middle of the structure and built of concrete six feet in length divided into two parts with its crest one foot below the top of the dam.

The dam has been built the past summer and has not been tested as yet by a flood flow. The pondage formed covers about two and a half acres. Should the structure fail, however, the pond being so small and the land so flat below, it does not appear as if any material damage would be done by the released water.

WEST SPRINGFIELD WATER WORKS DAMS.-- There are four municipal dams on Black Brook, or as it is sometimes called Bear Hole Brook, in the town of West Springfield. Black Brook is the outlet of Ashley Reservoir, a part of the water supply of the City of Holyoke, from which it flows south through West Springfield to the Westfield River into which it empties about a half mile downstream from the West Springfield-Westfield boundary line.

The brook is four and a half miles in length from its outlet at Ashley Reservoir to its mouth and has a drainage area of three and three-quarters square miles, not including the three square miles contributory to Ashley Reservoir, of which no account will be taken in the drainage areas of the dams now under consideration.

The first dam on Black Brook is about one and three-quarters miles upstream from its mouth, at a point a short distance above the West Springfield water works pumping station, where the drainage area contributory is two and a half square miles.

This is an earthen embankment two hundred and seventy-five feet in length, twenty-five feet in height, and twelve feet wide on its top. The overflow is at its west end and is thirty feet in length with its crest five feet below the top of the dam. It is built of concrete and discharges into a concrete channel laid through the dam to a point below the tow. The pond formed

by the structure is about six acres. The dam is in good condition.

About a half mile upstream from the last described dam, at a point where the drainage area is two and one-third square miles, is located another dam belonging to the West Springfield Water Works. This is an earthen embankment faced up and downstream with masonry walls. It is ninety-six feet in length and twenty-one feet in height. The spillway is a channel through the dam six feet in width and with its crest six feet below the top of the embankment. There is a bridge over the spillway which is part of the driveway carried by the dam.

The reservoir formed is not over two acres in area. There is some erosion of the rock ledge at the toe of the spillway, which, if it keeps increasing, it might be advisable to lay a concrete apron along the toe of the spillway. The dam is in fair condition, but should it fail, however, because of the small quantity of water impounded, it does not seem as if any material damage would be done by the released water.

Upstream from the last described dam about one and a quarter miles, at a point where the drainage area contributory is about three-quarters of a square mile, is another dam belonging to the town of West Springfield Water Works. This structure is located on Black Brook within about one-third of a mile of the West Springfield-Holyoke boundary line, and about three-quarters of a mile downstream from the Holyoke Ashley Reservoir.

The dam is an earthen embankment one hundred and two feet in length and nine feet in height. The spillway of the structure is at its east end and is built of concrete about twenty-five feet in length which discharges the waste water into a channel that extends beyond the toe of the embankment. The pond formed is about two acres in area. The structure, apparently, is abandoned, being purchased by the City of West Springfield Water Works only for the protection of the water shed.

The last or fourth dam belonging to the West Springfield Water Works on Black Brook is located about fifteen hundred feet upstream from the last described dam within one hundred and fifty feet or thereabouts of the West Springfield-Holyoke boundary line, at a point where the drainage area contributory is less than one-third of a square mile. This structure is located at the top of a cascade and is built of dry stone masonry forty feet in length and eight feet in height. The structure forms hardly any pond and like the dam next below is an abandoned structure being purchased, it appears, for the protection of the water shed.

WESTFIELD RIVER DAMS.-- There are seven dams on the Westfield River, three of which are in West Springfield, one in Westfield, and three in Russell.

The Westfield River is formed in the town of Huntington by the union of its east and middle branches about two miles north of Huntington Center, and by its west branch at Huntington Center; flows southeast through the towns of Russell and Westfield to the Westfield boundary line, thence forming the West Springfield-Agawam boundary line to the Connecticut River into which it empties. The Westfield River is twenty-three miles in length from Huntington Center to its mouth, and has a total drainage area of five hundred and fifteen square miles.

KAMAPOGUE ICE COMPANY DAM.-- The first dam on the river is in West Springfield about a quarter of a mile downstream from Mittineague, at a point where the drainage area contributory is five hundred and thirteen square miles and belongs to the Kamapogue Ice Company.

This is a low timber structure laid diagonally on rock ledge across the river with the Worthy Paper Mill located at its south end, and until burned down a few years ago, the Kamapogue Ice Company plant at its north end. The structure is about five hundred feet in length and not over six or seven

feet in maximum height. Because of this low height, in case of its failure, no material damage would be done by the released pondage. Moreover, there is no dam on the stream between it and the Connecticut River.

AMERICAN WRITING PAPER COMPANY DAM NO. 1.-- About a half mile upstream from the last described dam at Mittineague where the drainage area contributory is five hundred and twelve square miles, is a dam belonging to the American Writing Paper Company, Holyoke, Mass.

This is a sawed timber crib spillway structure laid on ledge four hundred and fifty feet in length between abutments, eighteen and a half feet in height and forms a pond about twenty acres in area. There is no apron attached to the structure, and it is perpendicular downstream. From its north end extends a canal about a half mile in length to the mills located in Mittineague.

The dam is an old one, being built some sixty years ago, and naturally the timber work shows some decay. This is noticeable especially in some of the cross timbers of the cribwork. The structure, however, is kept under constant inspection by the Engineering Department of the company and repairs made thereon when necessary. The dam and canals formerly belonged to the Agawam Company.

AMERICAN WRITING PAPER COMPANY DAM NO. 2.-- About a half mile upstream from the last described dam, at a point where the drainage area contributory is five hundred and eleven square miles, is another dam belonging to the American Writing Paper Company, which is the third and last dam on the river in West Springfield.

This is another timber spillway structure three hundred and fifty-eight feet in length and seven feet in height. It backs up the stream about two miles and forms a pondage which covers sixty-seven acres. This structure was built for the purpose of forming a storage to feed the pond below, the storage being fed through the headgates located in the north end of the structure. The dam is in poor condition and requires considerable repairs if not a new structure in whole.

WESTFIELD RIVER REALTY TRUST DAM.-- The next dam on the Westfield River is about seven miles upstream from the American Writing Paper Company dam, last described, in the City of Westfield near the Boston and Albany station and just downstream from the Elm Street Bridge that crosses the river, where the drainage area contributory is three hundred and sixty-five square miles.

It now belongs to the Westfield River Realty Trust, Westfield, Mass., Mr. Lewis Saffer, Manager. The property was purchased in recent years from the representatives of the Allen Estate and formerly was known as the Horton dam. It is a timber spillway structure four hundred and seventy-five feet in length and seven feet in height which is laid on ledge except at its south end which is laid on piles driven into the sand and gravel.

At this end are the headgates from which extend the penstocks to the mill built in close proximity. For a distance of eighty feet from the south end, the dam has an inclined apron attached. This apron was added in order to protect the penstocks from ice and the toe of the dam from erosion. The dam is not a very old structure being built about twenty-five years ago. It is in fair condition, except the apron already mentioned, which requires some repairs in the way of planking, etc. The pond formed by the structure is about ten acres.

THE STRATHMORE PAPER COMPANY DAM AT WORONOCO.-- The next dam upstream on the river is in the town of Russell at the village of Woronoco where the drainage area contributory is three hundred and fifty-two square miles and belongs to the Strathmore Paper Company, Woronoco, Mass.

The structure is, including the forebay from which the penstocks which lead to the power house are laid, four hundred and fifty feet in length and twenty-four feet in maximum height. It is irregular in plan, partly curved upstream, one section of which is built of concrete and stone masonry, another of timber crib, and a third of dry stone masonry, the two latter sections being backed with concrete and gravel.

To the timber crib section is attached a horizontal apron. The structure is under the supervision of the officers of the Strathmore Paper Company who makes repairs thereon when necessary. The dam is in fair condition. The pond formed by the structure is about thirty acres, and there are two mills attached, the old or original mill being located on the south bank close to the south end of the dam, and the other, which is comparatively new, is located on the north bank of the river a short distance downstream from the north end of the dam.

WESTFIELD RIVER PAPER COMPANY DAM.-- The sixth dam on the river and second in the town of Russell is located at the village of Russell where the drainage area contributory is three hundred and forty-two square miles and belongs to the Westfield River Paper Company, Russell, Mass.

This is a concrete structure about three hundred feet in length, twenty feet in height and of the Amberson type, which is a deck inclined upstream supported on piers. It is laid on an irregular line mainly on rock ledge across the stream. When the structure was built the power house was located near the center of the dam out, some years ago, this was abandoned, and a new power house built a short distance downstream from the east end of the structure.

The dam is not in very good condition as it shows some leakage, and there is some erosion of the concrete piers near their foundations. Considerable repairs were made on the structure last summer, and the superintendent of the company stated that the work was to be carried on next summer and until all necessary repairs are completed. The pond formed by the structure covers about twenty-three acres.

CHAPIN & GOULD PAPER COMPANY DAM.-- The third dam in the town of Russell, seventh on the Westfield River and last in Hampden County, is located about two and a half miles upstream from the Westfield Paper Company dam, last described, near the Hampden-Hampshire County line, or the Russell-Huntington town line, at a point where the drainage area contributory is three hundred and twenty-two square miles and belongs to the Chapin & Gould Paper Company.

The mill attached to this structure is known as the Crescent Paper Mill. The dam is built on the top of a ledge cascade following a curve like the letter S. It is a spillway structure built of stone masonry of heavy section, two hundred feet in length and twelve feet in height. The height of the dam together with that of the cascade creates a head or fall of twenty-nine feet.

The structure is in good condition although some of the masonry requires pointing. The pond formed covers about ten acres, and the mill attached is located on the west bank of the stream in close proximity to the end of the dam.

WILBRANAM

There are five dams and two natural ponds in the town of Wilbranam. Of the dams two are on the Chicopee River and are described and discussed with the other dams on the river under Chicopee, one on Twelve Mile Brook, one on Calais Brook and one on the south branch of Mill River.

NATURAL PONDS.-- The two natural ponds are Spectacle and Nine Mile Ponds, both of which are located in the northern part of the town of Wilbraham with one on each side of the Boston Road near North Wilbraham Center. Spectacle Pond has a surface area of twenty acres, a drainage area of a quarter of a square mile, and no visible outlet. Nine Mile Pond has a surface area of thirty-six acres, a drainage area of a quarter of a square mile and discharges into the north branch of Mill River.

LEROY H. GATES DAM NO. 1.-- This is located on Twelve Mile Brook (described under Monson), at a point about a half mile upstream from its mouth at Ellis Mills, so called, where the drainage area contributory is fourteen square miles and belongs to Leroy H. Gates, 15 Stone Street, New York City.

It is a dry stone masonry structure backed with earth two hundred feet in length and fourteen feet in height. The spillway is located at its south end and is fifty feet in length. There is no pond formed now by this structure, because the spillway has been lowered to a point where it causes no obstruction to the natural flow of the brook. No future inspection, therefore, of it will be necessary.

LEROY H. GATES DAM NO. 2.-- On Calkins Brook (described under Monson) which joins Twelve Mile Brook at Ellis Mills, at a point near its mouth where the drainage area contributory is practically the total drainage of the brook, namely three and a quarter square miles, is another dam belonging to Leroy H. Gates.

It is a dry stone masonry spillway structure backed with earth, one hundred feet in length and about six feet in height. This structure is a derelict and since it offers no obstruction to the natural flow of the brook, no future inspection of it will be necessary.

LEE N. GURTON DAM.-- On the south branch of Mill River (described under Springfield), at a point about two miles southwest of Wilbraham Center and one and a half miles upstream from the Wilbraham-East Longmeadow boundary line where the drainage area contributory is two and three-quarters square miles, is a dam belonging to Lee N. Gurton, 127 Union Street, Springfield, Mass.

The structure formed Stebbin's Pond, so called, and had a sawmill attached which went out of existence about twenty years ago. The dam is now a derelict with part of it gone out, and since it forms no pond or obstructs the natural flow of the brook any longer, no future inspection of it will be necessary.

CONCLUSION

It may be stated that the dams herein recorded include, as far as is known, all the dams in Hampden County, even those that have not been in use for years as well as those in use at the present time.

In making the inspection, no attempt was made to obtain great accuracy in the measurements of the dams except in special cases where the stability of a dam or the discharging capacity of a spillway came into question.

This policy was followed in order to expedite the field work as, outside the cases mentioned, exact measurements were not needed for determining the condition of the structures. Neither were they needed for this report because approximate or even roughly approximate measurements convey to the mind the magnitude of each structure just as clearly as if the measurements were made to the fraction of an inch.

In relation to the areas of the ponds, these were not actually measured like the dams and, were only roughly estimated except in the case of the larger areas which were found in and taken from state records. The areas of the ponds are given simply for the purpose of comparison and to give an idea of the magnitude of the danger, should failure occur.

The drainage areas, except in the cases of the Connecticut River, the Chicopee River and the Westfield River, which have been taken from state records, have been computed from the state maps to the nearest square mile, with the exception of the smaller areas which have been computed to a fraction of a mile.

These drainage areas, together with the locations, types of structures, dimensions and pondage will not only be of great value in future inspections but such data will at all times be a ready reference for the county to determine those structures that require the most supervision from a danger standpoint, or in the investigation of any of these structures reported as needing attention.

In giving the names of the owners of the dams inspected, it was thought advisable to add the post office address of each in case any correspondence might be necessary. Regarding ownership, while every effort was made to obtain the name and address of the legal owner, notwithstanding, some errors may have been made as it was difficult to find the owners without going to the Registry, non-resident owners especially. Likewise, post office addresses were difficult to obtain especially in the rural districts.

Throughout the whole inspection, where a dam was found in poor condition and repairs were necessary or where a spillway was found inefficient, the matter was drawn to the attention of the owner, if within reach, and the work to be done fully explained to him.

Attention is directed to the large number of abandoned structures, derelicts and the dams which are kept in fair condition but which are not now devoted to any service. The existence of this situation indicates, to a great extent, the changes in economic conditions in Hampden County, which have taken place within the last half century especially when it is realized that fifty years ago, practically all of these structures were in use, each one with an industry attached to it, and evidently responding to a certain economic demand for its existence.

Such a change may be attributed to a number of factors foremost among which must be the gradual shifting of population from the country to the city, the increased facilities of transportation, the development of new industries, particularly electric power, radical changes in industry because of new inventions and the increasing centralization of industry with its necessary maximum production in certain centers.

The knowledge that most of the old time sawmills are passing reflects the loss of timber in the resources of the county and encroachment of the portable sawmill. The fact that the gristmills, for years important in every community, and the small factories, at one time the center of activity, are being abandoned, is late evidence of modern development, ruthless in some instances but beneficial in some of its larger phases.

There is ample opportunity for an interesting study of changing conditions and their effect by tracing the history of the dams of the county which, of course, is beyond the scope of this report but which is so striking that it seems to deserve mention.

Respectfully submitted,

James L. Tighe

APPENDIX

82

J. STEPHENS ARMS CO. DAM #1. - The dam located across the outlet of Mill Pond in Springfield and referred to on page sixty-two of this report as belonging to the Barnum & Berry Skate Company, Springfield, Mass. belongs instead to the J. Stephens Arms Co., Chicopee Falls, Mass.

OLD DAMS DISCOVERED AFTER REPORT WAS FILED

J. STEPHENS ARMS CO. DAM #2. - This dam is located in Chicopee Falls about four hundred feet west of the junction of St. James Ave., and Broadway Street on a small brook that rises near the Chicopee-Springfield line and flows westerly through Chicopee Falls to the Chicopee River. The total drainage area of the brook at its mouth is about half a square mile and at the dam a little more than a quarter of a square mile. The dam is an earthen embankment faced on its downstream side with brick masonry. It is about seventy feet in length, eighteen feet in height and nine feet in width on its top.

Through the structure, at a point about three feet above the bed of the brook, is laid a wrought iron waste pipe, two feet in diameter, controlled by a head gate located in a well at the upstream toe of the dam. This pipe regulates the height of the water in the pond. Besides, there is a spillway in the center of the dam, three feet in length and one and a half feet in depth. Very seldom, if at any time, does water pass over this spillway, as the discharge from the pond is conveyed through the waste pipe. Moreover, the flow of the brook into the pond is under control and so regulated that flood water is diverted into another waterway before it reaches the pond. The area of the pond is about half an acre and it is used as a private supply for washing purposes etc., at the J. Stephens Arms Co. mill. The dam is in fair condition and does not appear to require any repairs at present.

J.T. PROSSER DAM # 1. - In Chicopee Falls, about two hundred feet downstream from the Stephens Arms Co. dam #2 above described, at a point where the drainage area of the brook is about a quarter of a square mile, is a small concrete dam belonging to J.T. Prosser of the Chicopee Mfg. Co., Chicopee, Mass. Its length is about sixty feet and height five and one half feet. The pond formed thereby is a small pleasure pond.

J.T. PROSSER DAM # 2. - Three hundred and fifty feet or thereabouts downstream from the J.T. Prosser dam #1 on the same brook is another small concrete dam belonging to the same owner. It is fifty feet or thereabouts in length, and about five feet in height. This dam is in poor condition and forms no pondage. While neither of the J.T. Prosser dams is subject to inspection, nevertheless, it was thought advisable to make a record of both.

JOHN H. ASH ESTATE DAM. - This dam is located in Chicopee Falls on the same brook as the Hampden Bleachery dam at a point about a half

a mile upstream from the latter and about five hundred feet west of the Chicopee Water Works standpipes. Its drainage area is very small being not more than a quarter of a square mile and the pond formed thereby covers about three acres.

The embankment is in poor condition showing considerable erosion on the downstream slope. It is recommended that repairs be made thereon and a surface spillway added to supplement the present overflow pipe. Should repairs not be made on the structure the pond should be emptied, for, if the dam should fail with the reservoir full, some material damage might be done to the Hampden Bleachery plant downstream.

JOSEPH DROBAT DAM. - At the headwaters of Wolf Swamp Brook, on which are located the Springfield Country Club dam, the Felix Lyncosky dam and the Springfield Ice Co. dam, is an icepond dam belonging to Joseph Drobat, Morgan Road, West Springfield, Mass. It was built about ten years ago and is four hundred feet or thereabouts in length and five feet in height with a drainage area contributory of less than a quarter of a square mile. Its height, drainage area, and small pondage show that the structure may not come within inspection requirements, nevertheless, it was thought advisable to make a record of it.

OLIVER L. GREEN DAM. - This structure is located near the highway at a point about a mile southeast of North Willbraham on a small tributary of Twelve Mile Brook from the south and belongs to Oliver L. Green, North Willbraham, Mass. It is an embankment about seventy feet in length, fifteen feet in height and twenty feet in width on top. The surface area of the pond formed by the dam is only about an eighth of an acre and the watershed not more than a half a square mile. Because of the very small pondage failure of the structure would cause no material damage.

NEW DAMS BUILT SINCE 1925.

WILLIAM D. SLATE DAM. - About five hundred feet east of Sheridan Street in Chicopee Falls, on a small brook which flows between Sheridan Street and Morton Brook to the Chicopee River, is located a small icepond dam belonging to William D. Slate, Chicopee Falls, Mass. Its drainage area is about one square mile and at the point at which the dam is constructed, less than half a square mile.

The dam was completed in 1926 and is an earth embankment with a concrete core one foot in thickness. Its length is about sixty-five feet, height above the streambed eight and one half feet and width on top five feet with slopes from 2 to 2½ on 1 on the upstream side and 2 to 1 on the downstream side. At the east end of the dam is the spillway, built of concrete. Its crest is three feet in width and two and one half feet lower than the top of the dam. There is also a six inch gated iron drain pipe laid through the base of the dam.

CITY OF CHICOPEE WATER WORKS DAM. - This dam which was completed in 1927 is located on Cooley Brook about one thousand feet upstream from the present water works pumping station, or five

thousand feet upstream from the confluence of Cooley Brook and the Chicopee River.

It is an earthen embankment having a heavily reenforced concrete core wall of the flexible type, so called, since it is only one foot in thickness. The wall was extended three feet below the natural surface where it was rigidly connected with steel piling driven from thirty to thirty-five feet into the ground.

The length of the dam along its top is five hundred and fifty feet and its hight above the streambed forty-six feet. Its width on top is twenty-two feet with slopes 3 and $3\frac{1}{2}$ to 1 on the upstream side and $2\frac{1}{2}$ to 1 on the downstream side. There is a berm five feet in width on each slope and the upstream slope is protected against wave action by a concrete facing six inches in thickness.

The spillway and spillway channel are located at the west end of the dam and built of concrete. The width of the spillway is forty-five feet and its crest eight feet below the top of the dam. The reservoir formed by the dam covers about thirty acres, has a capacity of about one hundred and thirty-five millions of gallons and a watershed of four square miles.

APPENDIX #2.

PAUL KORSEN DAM. -- This is an ice pond dam built in 1929-1930 across the head waters of the Agawam Woolen Company brook, so called, in the town of Agawam at a point where the drainage area contributory is not over a quarter of a square mile. The dam is an earthen embankment having a reinforced concrete core wall one foot in thickness and a reinforced concrete spillway. The latter is formed by a shaft or well, five by five and a half feet in section, built in the embankment at a point thirty feet from its north end a reinforced concrete culvert, three feet by three feet in section, laid from the bottom of the well to a point outside the downstream side of the structure. From the pond to the well a gated reinforced concrete drain pipe twenty-two inches in diameter is laid through the dam.

The length of the dam along its top is one hundred and forty feet, its width on top twenty feet and height above the bed of the brook to the crest of the spillway eleven feet. The surface area of the pond formed by the dam is only about two acres and the capacity is small. There are some details of the construction work not fully completed as yet. The owner of the dam is Paul Korse, Gardner Street, Agawam, Mass.

SPRINGFIELD BOYS' CLUB DAM -- This is a small structure built in 1930 across Mill brook in the town of Brimfield at a point about one and a half miles east of Brimfield village where the drainage area of the brook is about twenty-three and a half square miles. The dam is a concrete spillway structure fifty-two and a half feet in length and about three feet in height above the streambed. The pondage formed by the dam is not over half a million gallons and consequently would do no damage even if the structure failed.

A. E. DAY DAM. -- This dam was built in 1930 in the town of Chester across the middle branch of the Westfield river at a point where the drainage area contributory is about thirty-seven square miles. It is a timber spillway structure about seventy feet in length between earth abutments and four feet in height above the streambed. The pondage formed is small and would do no damage even if suddenly released by failure of the structure.

A. A. LANGEWALD DAM. -- In 1929 this structure was built in Chicopee across the Willimansett brook, so called, to form a swimming pool at a point where the drainage area contributory is about two and a half square miles. It is an earthen embankment about one hundred and ten feet in length, eight feet in width on top and fourteen feet in height above the streambed. Its spillway or overflow is five feet below the top of the dam.

The slopes on both the upstream and downstream side are very flat being about one on four and a half. The capacity of the pond or pool formed by the dam is about one and a half million gallons. The dam is built on the site of the old earthen structure which failed some years ago. This old structure was thirty-four feet in height and formed a pondage of fifty-one million gallons. The owner of the dam is A. A. Langewald of 71 Queen Street, Holyoke, Mass.

CHICOPEE MANUFACTURING CORPORATION DAM. -- In the city of Chicopee across a small tributary of the Chicopee river from the north, known as hearthstone quarry brook, a rubble concrete spillway dam was built in 1930. It is located about fifty feet upstream from the mouth of the brook where the drainage area contributory is, it appears, less than a square mile. The dam is eighty feet in length along its top, twenty-two feet in extreme height above the streambed, has a bottom width of thirteen feet and a top width of five feet. The structure rests on a ledge foundation and forms a pondage of less than three-quarters of a million of gallons.

Because of this small pondage and the location of the dam being so near to the river bank, should the structure fail, there would be no danger from the released pondage.

CITY OF WESTFIELD WATER WORKS RESERVOIR DAM. -- This dam was completed in 1929. It is located on Tillotson brook in Granville at a point where the drainage area contributory is about five and three-quarter square miles. It is an earthen embankment with a concrete cutoff wall extended to bedrock. Its width on top is twenty-four feet and length including spillway about eight hundred and forty feet. The upstream side below the water line is sloped one on three and the downstream side on an average of one on two and a quarter. The upstream side is heavily rip-rapped with stone and the downstream side has a stone toe.

The spillway is located at the westerly end of the structure from which a channel, excavated in the natural ground, extends and connects with the brook at a point a considerable distance downstream from the dam. The spillway is sixty feet in length and its crest is ten feet below the top of the dam. It is built of concrete and the spillway channel is lined with the same material.

There are two pipes laid through the dam, one and forty-two inch concrete drain pipe and the other a twenty-four inch cast iron outlet pipe. The area of the reservoir formed by the dam is about seventy five acres and capacity six hundred and thirty millions of gallons.

JAMES E. RORABAUGH DAM. -- In 1930 an earthen ice pond or pleasure dam was built in the southern part of the town of Holland within fifteen hundred feet or thereabouts of the Connecticut line across a very small tributary of the brook which rises in Connecticut and flows easterly into Hamilton reservoir. The dam is seventy feet in length and seven and a half feet in height above the streambed. The drainage area contributory thereto is apparently less than half a square mile and the pondage formed thereby less than one million gallons.

Since the height, pondage and drainage area contributory are less than ten feet, one million gallons and one square mile respectively, the law does not require the approval of the plans and specifications of the structure by the county. Notwithstanding, however, it was thought advisable to make a record of it. The owner of the dam is James E. Rorabaugh, 674 Buchannon Place, West New York, New Jersey.

Hampden County Dams 1926 Tighe Report



1926 Reports

A total of 61 dams were issued safety repair orders from the 1925 inspection of all dams in Hampden County. 32 two have been repaired at this time and 29 have had no changes made. James L. Tighe November 13, 1926.

Dam	Hampden County
-----	----------------

JAMES L. TIGHE, MEMBER
AM. SOC. CIVIL ENGINEERS
ENG. INSTITUTE OF CANADA
INST. OF C. E. GREAT BRITAIN
AM. INSTITUTE CONSULTING ENGINEERS
AM. & N. E. WATER WORKS ASSOCIATION

TIGHE & BOND

189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

PHILIP E. BOND, ASSOCIATE
AM. SOC. CIVIL ENGINEERS
MEM. MASS. HIGHWAY ASSOCIATION
MEM. N. E. WATER WORKS ASSOCIATION
FORMERLY CITY ENGINEER
HOLYOKE, MASS.

CONSULTING, HYDRAULIC, SANITARY & MUNICIPAL ENGINEERS

WATER POWER INVESTIGATION
AND DEVELOPMENTS
DAMS & POWER INSTALLATIONS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL

STRUCTURAL ENGINEERING
STREET PAVING & BRIDGES
REAL ESTATE SURVEYS

Holyoke, Mass., November 13, 1926.

The Hon. The County Commissioners of Hampden County ,
Springfield, Massachusetts.

George S. Cook, Chairman.

Dear Sir:

The dams of the county, which were found by inspection last year to require repairs and about which notices had been sent by the Commissioners to the owners in the early part of the year, have been recently inspected again by your Engineer who reports as follows:

In regard to the notices sent it will be remembered that they were of two kinds, one in the form of an "order" sent to those whose structures were considered dangerous should failure occur and the other suggestive only sent to those whose dams were in poor condition but, in case of failure, nowise dangerous to life or property.

While the latter kind might be disregarded entirely, nevertheless, inasmuch as they had to be inspected to find out as to whether they would be dangerous in case of failure, it was thought advisable to let the owners know of their condition so that they could have them repaired in case they wished to prolong their

JAMES L. TIGHE, MEMBER
AM. SOC. CIVIL ENGINEERS
ENG. INSTITUTE OF CANADA
INST. OF C. E. GREAT BRITAIN
AM. INSTITUTE CONSULTING ENGINEERS
AM. & N. E. WATER WORKS ASSOCIATION

TIGHE & BOND

189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

CONSULTING, HYDRAULIC, SANITARY & MUNICIPAL ENGINEERS

PHILIP E. BOND, ASSOCIATE
AM. SOC. CIVIL ENGINEERS
MEM. MASS. HIGHWAY ASSOCIATION
MEM. N. E. WATER WORKS ASSOCIATION
FORMERLY CITY ENGINEER
HOLYOKE, MASS.

WATER POWER INVESTIGATION
AND DEVELOPMENTS
DAMS & POWER INSTALLATIONS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL

STRUCTURAL ENGINEERING
STREET PAVING & BRIDGES
REAL ESTATE SURVEYS

Holyoke, Mass., November 13, 1926.

usefulness.

There were twenty-eight (28) of these suggestive notices sent to owners which, according to inspection, twelve (12) or forty-three per cent availed themselves of the information tendered by having their dams repaired. The fifty-seven per cent who paid no attention to the notices do not apparently consider the maintenance of their structures a paying proposition any longer and are willing to allow them to become derelicts like so many others of the small dams throughout the county.

The dams that were ordered to be made safe are sixty-one (61) in number located as follows:

2	in	Agawam
2	"	Blanford
6	"	Brimfield
6	"	Chicopee
4	"	Hampden
1	"	Holyoke
1	"	Longmeadow
3	"	Ludlow
11	"	Monson
2	"	Palmer
1	"	Russell
2	"	Southwick
5	"	Springfield
5	"	Tolland
3	"	Wales
6	"	Westfield
1	"	West Springfield

Of the above total only thirty-two (32) structures or fifty-three per cent were repaired, and it is suggested that a second

L. S. L. TIGHE, MEMBER
OC. CIVIL ENGINEERS
INSTITUTE OF CANADA
OF C. E. GREAT BRITAIN
INSTITUTE CONSULTING ENGINEERS
N. E. WATER WORKS ASSOCIATION

TIGHE & BOND

189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

CONSULTING, HYDRAULIC, SANITARY & MUNICIPAL ENGINEERS

PHILIP E. BOND, ASSOCIATE
AM. SOC. CIVIL ENGINEERS
MEM. MASS. HIGHWAY ASSOCIATION
MEM. N. E. WATER WORKS ASSOCIATION
FORMERLY CITY ENGINEER
HOLYOKE, MASS.

WATER POWER INVESTIGATION
AND DEVELOPMENTS
DAMS & POWER INSTALLATIONS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL

STRUCTURAL ENGINEERING
STREET PAVING & BRIDGES
REAL ESTATE SURVEYS

Holyoke, Mass., November 13, 1926.

notice drafted as in the forms appended be sent to the twenty-nine (29) owners who have made no repairs or complied with the notices sent them.

Respectfully Submitted,

James L. Tighe

Filed November 15, 1926.

Hampden County Dams 1928 Tighe report -Cobble Mountain Dam



1928 Reports

Report filed July 5, 1928 by James L. Tighe on the "Stability of Proposed Cobble Mountain Dam" - July 1928". Mr. Tighe provides in depth analyzis of various dam construction techniques and in conclusion, he recommends approval of this massive public works project.

City/Town	Russell
City/Town	Springfield
City/Town	Westfield
City/Town	Blandford
Dam	Cobble Mountain Dam
Water	Borden Brook
Water	Lilittle River
Water	Cobble Mountain Reservoir

Copy Report
To Hampden County
On Stability of
PROPOSED COBBLE MT. DAM
July 1938

July 5, 1928.

The Hon. the Board of County Commissioners
of Hampden County, Massachusetts,
George S. Cook, Chairman.

Dear Sir:

In compliance with your instructions we have examined, relative to its stability, the plans and specifications, filed for your approval on May 16th last, of the Proposed Cobble Mountain dam to be built by the City of Springfield across Little River.

The site of the proposed structure, which is a narrow gorge having steep slopes rising some hundreds of feet above the streambed, is about two miles upstream from the present intake reservoir of the City of Springfield in the south-west corner of the Town of Russell.

Its upstream end juts for a short distance across the Russell-Blandford boundary line and is about six hundred feet or thereabouts northerly from the point common to the towns of Russell, Blandford and Granville.

The drainage area of the stream above the proposed dam is, in round numbers, forty-six square miles. Of this area, eight square miles are contributory to the Borden Brook storage reservoir, built by the City of Springfield in 1909. This reservoir is located about two and a half miles westerly from the proposed dam in the towns of Blandford and Granville. It has a surface area of 213 acres and a capacity of 2½ billions of gallons, impounded by an earthen dam 75 feet in height.

Borden Brook, upon which the reservoir is located, is a tributary of Little River which it enters at a point about six-tenths of a mile upstream from the site of the proposed dam. The latter is also to be an earthen structure built by what is known as the "hydraulic-fill process. According to the plans, when completed, it will be 235 feet high above the streambed with its top at elevation 965. Its length along the base will be 60 feet and along the top 700 feet. Its width at the base will be

1505 feet and at the top 50 feet. These figures show that its average width will be about twice its average length.

These figures also show that the natural rising slopes of the valley from the streambed, against which the ends of the dam will abut, are very steep, being on the average one vertical on $1 \frac{1}{3}$ horizontal or about the natural slope of ordinary earth. The slopes of the proposed dam are very much flatter being on the upstream face, on the average, one vertical on $3 \frac{1}{2}$ horizontal and, on the downstream face, one vertical on three.

The reservoir formed by the dam will have a surface area of 1031 acres and, in round numbers, a capacity of 20 billions of gallons, that is, about eight times the capacity of the Borden Brook reservoir. From it will extend two tunnels, one on the north side of the stream, known as the diversion tunnel and the other on the south side of the stream, known as the pressure tunnel. The latter will convey the reservoir water to the proposed hydro-electric power house, whence it will be discharged into the present intake reservoir.

The head or portal of this tunnel will be located at a point nearly half a mile away from the site of the proposed dam at an elevation of 135 feet below the top of the dam and 115 feet below the crest of the spillway. Its length will be in the neighborhood of 7000 feet and discharging capacity, under full reservoir, 800 millions of gallons or thereabouts per day.

The diversion tunnel, on the opposite side of the stream and now nearly completed, is for the purpose of diverting the flow of the stream during the construction of the dam and of drawing off and emptying the reservoir if ever necessary.

It is driven through the mountain in a location outside the site of the proposed dam, from a point in the streambed 1200 feet or thereabouts above the upstream toe to a point in the streambed 200 feet or thereabouts below the downstream toe. The length of the tunnel is 1550

feet while the length of the stream connecting its ends is about 3000 feet or practically twice that of the tunnel owing to the U-shaped course of the stream. The discharging capacity of this tunnel is 4000 cubic feet per second or a capacity sufficient to discharge the Borden Brook storage in one day.

During the construction of the proposed dam it is expected to by-pass the total flow of the stream through this tunnel without backing up water or forming any pondage except in times of extremely high flood flow.

The construction of this tunnel will obviate the necessity of laying outlet pipes through the proposed dam thus eliminating entirely one of the most troublesome and dangerous accessories of the reservoir earthen dam.

Safe earthen dams can be and have been constructed by the thousand with outlet pipes laid through them, nevertheless, these pipes are always an element of danger and as a matter of fact, more failures can be attributed to them than to any other cause with possibly the exception of inefficient spillways.

This brings us to the spillway of the proposed dam. It will be located, not in the customary place, that is, at or adjacent to one end of the structure, but at a considerable distance therefrom and on the same or south side of the stream as the pressure tunnel. Its crest will be about midway between the dam and pressure tunnel, approximately 1500 feet from either, and its discharging end 2700 feet or thereabouts downstream from the downstream toe.

Considering this latter distance of 2700 feet between toe and discharge end, and the fact that the elevation of the streambed at the latter point is some 50 feet lower than the streambed at the toe, it can easily be seen that there should be no danger of toe erosion from backwash even in the highest floods.

The crest of the spillway is 135 feet in width and 20 feet lower than the top of the dam,

being at elevation 945. From the crest, the spillway gradually narrows and rolls off in an ogee curve for a distance of 165 feet to a point where its width will be 50 feet and its elevation 15 feet lower than the crest. From this latter point it will continue the same width to the top of the slope overhanging the streambed, the distance being about 950 feet or a total distance from crest to streambed of a little over 1100 feet.

The spillway, for a stretch of about 700 feet from the crest, will be in deep rock excavation, running from an average cut of 35 feet to a maximum of 50 feet, and will be crossed by a reinforced concrete arched bridge at a point about 145 feet from the crest.

This bridge will span the channel, thus having no supporting piers therein to obstruct the free passage of the water, and will be set at such an elevation that the inside of its crown will be two feet higher than the top of the proposed dam and 35 feet higher than the bottom of the spillway channel underneath it. From these figures it can be seen that the bridge will offer no obstruction to the free discharge of water in the spillway.

In regard to the discharging capacity of the spillway, computations show that with the height of the reservoir at the "danger line", so to speak, which as computed in this case, should be not less than 6 feet below the top of the dam, the ample allowance be made for wave action, the rate of discharge over the crest of the spillway, that is, under a head of 14 feet, would be three and a half times the maximum recorded rate of flow of Little River at that point.

This rate of discharge over the crest of the spillway would be 465 cubic feet per second per square mile of drainage area contributory, or a rate about three times as high as the maximum recorded rate of the Westfield River in the phenomenal storm of December 1878.

These figures show an adequate factor of safety of spillway capacity without placing any value on the very desirable effect the new storage would have on the flood flows of the stream as they reach the reservoir where their intensities

or peaks would be smoothed out, if not entirely dissipated.

To put the capacity of the spillway in another light, it may be said that it would be sufficient, without endangering the dam, to discharge a flood flow of the same intensity as the maximum flow of the Westfield River in 1878, increased by that from the Borden Brook reservoir assuming that the latter were suddenly released and instantly discharged into the new reservoir.

A spillway, then, cut through the solid rock in a location more than a quarter of a mile away from the dam and having a discharging capacity as shown, may be considered a safe, stable and efficient appurtenance of the proposed development.

Because of the height of the rock-ledge walls of the spillway, which as stated will be 35 feet on the average and 50 feet at one point, the danger of rock-slip after the completion of the excavation has to be considered and guarded against, in case there might be any reason to expect such an occurrence.

The plans indicate flashboards 7 feet in height on the crest of the spillway. Inasmuch as there are no details given regarding their type or arrangement, whether fixed or automatic, to be used temporarily or permanently, it is assumed that it was not the intention to have this matter considered by the County now nor probably until after the completion of the dam. This, of course, does not apply to the 6-inch wrought iron sockets inserted in the crest and flush with it to receive the flashboard pins.

- In view of the magnitude of the proposed dam, its novel construction, at least in these parts, and the great responsibility incurred by its erection, a few words by way of comparison with other earthen dams may not be out of place here.

The construction of earthen dams is supposed to have begun in Egypt hundreds of years before the Deluge when earthen embankments were constructed for irrigation purposes and for

confining the Nile within its banks.

In other eastern countries earthen dams were also constructed at a very early date. Some of these are still in use, like the Veranum dam in India, a structure 12 miles long and forming a reservoir that covers an area of 35 square miles. These primitive structures, however, were simply mounds of earth built by slaves who carried the material to the site of the dam in baskets and consolidated it by trampling it in.

Since the time of the first builder of dams thousands of years have passed in the experience and practice of the art, illustrated unfortunately by many disastrous failures, yet the modern type is still a mound of earth, having changed very little fundamentally from its antediluvian ancestor.

There is, however, a great difference in the methods of construction inasmuch as the mound is not raised with earth carried and trodden in by slaves but by steam shovel, truck and roller and by water pressure and water pools.

The original earthen dam was a homogeneous embankment from top to bottom, that is, one in which the material was alike throughout. This continued to be practically the sole type of earthen dam until modern times when it was modified by the introduction of an impervious core-wall to cut off percolation through it. For this purpose, British practice favored and still favors a clay puddle core-wall while American practice favored a masonry wall.

Clay puddle core-walls never appealed to the American engineer probably because of the unreliable character of clay which when drying shrinks and cracks and when wet swells and becomes unstable. In the western states of this country masonry cores were seldom used and some of the highest earthen dams were constructed without them. Some decades ago they were very popular in the Eastern states especially in New England. Within recent years, however, masonry cores have lost much of their popularity inasmuch as many engineers consider them an element of weakness. One of the objections is that the rigidity of the masonry and the flexibility of the earth produce unequal settlement.

To meet this objection and probably for economical reasons also, where cores are advisable, because of the character of the construction material not being desirable from the standpoint of imperviousness, they are sometimes built of compact surface soil. As an example, the Scituate earthen dam completed in 1926 for the water works of the City of Providence, has a surface soil core 77 feet at its greatest width built in six-inch layers with surface stripping removed from the site of the reservoir. The dam is 3200 feet in length and 100 feet in height above the streambed, with its core extending to the solid ledge in a trench 80 feet deep.

Where the material for its construction is suitable, the homogeneous type of dam is in favor again. Borden Brook dam is a good example of this type for it has no core-wall and the material therein is practically alike and of the same density throughout its whole mass. In the construction work of both the homogeneous and the core types, the earth from the borrow-pit in its natural state barring stones above a certain size, is deposited in layers and compacted by rolling.

The difference between the two types is, that in the one case, efficiency depends upon the degree of imperviousness and stability of the whole embankment and in the other merely upon the degree of imperviousness of the core-wall and the stability of the embankment on each side to support it in place. There is no difference, however, between these types regarding their foundations as it is just as necessary that the foundations of the one be solid and watertight as of the other.

The homogeneous and the core-wall types, therefore, represented in general all earthen dams of any magnitude until the hydraulic-fill dam, that is, the type under consideration was introduced. This type is a product of the West being originated and developed in the mining regions of California where the methods used in hydraulic mining were applied to earthen dam construction.

These methods were the tearing down of sand cliffs, banks of earth etc. by the application

of water discharged through nozzles under pressure, and the removal of the material thus disintegrated by means of water conducted in sluices etc. to some desired point below, where it would be deposited in a semi-liquid condition.

In the application of these methods to dam-construction where the material is sluiced from the banks and deposited in the dam, the construction is called "hydraulic-fill". On the other hand, where the material is not sluiced but hauled in its natural state to the outer edges of the dam and then washed into place by water under pressure, the construction is called "semi-hydraulic fill". Hence the terms, "Hydraulic-fill" and "Semi-hydraulic fill" dams.

The distinction, as seen, applies only to method of construction inasmuch as the results in either case are the same so far as efficiency and stability of the structure are concerned. In the dam in question, according to the specifications, the contractor will be allowed his choice of these methods of construction.

At first, the hydraulic-fill dam was naturally a small structure and, no doubt, built only in a crude way, probably for the forming of temporary ponds in the mining districts. Since then, however, owing to its design and construction being based on more scientific lines regarding safety and efficiency, it has gained greatly in popularity and today where the local conditions are favorable, the hydraulic or semi-hydraulic fill dam is considered an efficient and a most economic type of high earthen dam, especially for structures higher than 120 or 130 feet. In the ordinary dam, whether of the homogeneous or core type, when its height goes beyond this, the hauling and placing of the large mass of material required for the construction, is likely to make the cost prohibitive.

Being of western origin, neither the hydraulic nor semi-hydraulic fill dam is as yet very common in New England and it is only a few years ago that the first, a semi-hydraulic fill was built in Massachusetts. The plans of this dam, known as the Sherman dam were examined for Franklin County by the writer. It is 100 feet in height and was built by the New England Power Company across the Deerfield river at a point about a half a mile downstream from the Vermont line.

Previously there were two dams of the same type built by the same company across the head waters of the Deerfield river in Vermont. One of these, known as the Somerset dam was completed in 1914 and is 110 feet in height while the other known as the Davis Bridge dam, located near Readsboro, was completed in 1923 and is 200 feet in height. Its length along the top is 1250 feet.

Its width at the top is 25 feet and at the base 1300 feet with an average slope on the upstream side of about one vertical on $3\frac{1}{4}$ horizontal and on the downstream side of one vertical on 3 horizontal.

It will be observed that the slopes of this and the proposed dam are similar. It will also be observed that the top of the proposed dam is 25 feet wider than the top of the Davis Bridge dam thus showing that the former is heavier in section than the latter.

When the Davis Bridge dam was completed, and that is only five years ago, it was one of the few very high earthen dams in the world and the highest in New England. When the proposed Cobble Mountain dam is completed it will not only have that distinction, but so far as the writer knows will be somewhat higher than the highest earthen dam in the world at the present time.

The hydraulic or semi-hydraulic fill dam, like the ordinary masonry core structure described above, consists of a core and two embankments. The core, however, is much larger in the hydraulic type, being generally the middle third of the dam, or at least having a width not less at any point than the height of the dam above that point. It is formed in a pool of water maintained between the embankments.

Both core and embankments are constructed of the natural earth brought to the site of the dam by sluicing or hauling and deposited on the outside of the embankments whence it is washed towards the middle of the dam, the coarsest material remaining at the outside, while the rest is carried by the water, gradually sinking as it flows, the coarser first, the medium next and the finest last at the center of the pool. This last on precipitation forms the impervious core while the coarser material forms the embankments which become more and more pervious towards their toes.

If the particles forming the core are very fine the core may be so completely watertight that it may take a long time, even years, after the structure is completed, before it drains and becomes hard or thoroughly consolidated. The grade of fineness, therefore, of the particles of the core material is most important in the construction of the hydraulic-fill dam since on the one hand, the particles must be small enough to make a watertight core and on the other hand of such size as to allow drainage in order that consolidation may occur within a reasonable time.

The core in a semi-liquid condition is much heavier than water and therefore exerts a greater pressure upon the embankments supporting it than if the semi-liquid were replaced by water.

Water pressure against a dam does not depend upon the volume of water in the reservoir formed thereby, even though the reservoir may extend for miles around, but upon the height of the water at the face of the dam. Similarly, the pressure exerted by the semi-liquid core against both embankments depends upon its height and not upon its volume.

In the construction work, therefore, if the completed core were still a semi-fluid or even plastic, the pressure on each embankment would be greater than any water pressure on the dam after completion. Accordingly, the hydraulic-fill or semi-hydraulic fill dam is weakest during construction, because at this time it is nothing more than two slender embankments, so to speak, each resisting a pressure, which even allowing for the partial consolidation of the core that experience has shown occurs, would at least equal any water pressure against the completed dam. If, then, the hydraulic-fill dam or semi-hydraulic fill dam bears up under construction, its stability has been tested and a factor of safety established.

The factor of safety of the proposed dam, as computed appears to run from $2\frac{1}{2}$ during construction to $5\frac{1}{2}$ on consolidation of the core. It may be stated here, however, that mathematical reasoning and mathematical results on this point cannot be more than roughly approximate, because of the assumptions that have to be made on account of the changing condition of the core, weight of the embankment material, coefficients of friction etc.

Nevertheless, the figures given may be considered conservative for they do not take into account the stabilizing effect of the reinforcement of the upstream embankment by an independent rock-fill toe 72 feet in height nor of the rock-fill wedge under the downstream embankment for increasing frictional resistance nor of the reinforcement of the downstream embankment by another rock-fill toe 50 feet in height faced with an arched concrete retaining wall 35 feet in height.

The core, whose center is about 50 feet upstream from the center line of the dam, is 230 feet in width at its base and 40 feet in width at its top with an average slope of 10 on 5 $\frac{1}{2}$ on its upstream side and 10 on 1 $\frac{1}{2}$ on its downstream side. It is of the minimum size used in practice as its width at any point is slightly less if anything than the height of the dam above that point. This, however, is not detrimental to the stability of the dam.

As a watertight structure depends entirely upon the core, the construction of the latter according to the specifications is to be kept under vigilant inspection and its material continually tested in order that it will be of the proper quality regarding the size and fitness of its particles, upon which so much depends relative to the stability and imperviousness of the dam. Its stabilizing condition shall also be under constant inspection as on the pool a scow will be kept from which two men will test the core by the "pipe method", so called, that is, seeing how far they can push a 1 $\frac{1}{2}$ inch pipe into it at different points.

In the construction of dams and in fact in all other kinds of construction work a solid foundation, it is needless to say, is of the first importance. It is most fortunate, then, that the foundation of the Cobble Mountain Dam is a very desirable one since not only the core but practically the whole dam is to rest on the solid rock. To make this connection possible, all the earth on top of or covering the rock within the site of the dam, with the exception of a fringe around the perimeter, will be used as material for an sluice into the dam.

To make a solid watertight bond between the core and the ledge any soft or defective rock within the core zone will be removed and a cutoff trench 80 feet wide will be excavated across the bed of the

stream carried in diminishing widths to the top of the dam. The depth of the trench is not fixed in the specifications as this will be governed by the quality of the rock as the excavation proceeds. Its minimum depth, however, is fixed at 5 feet. Where it crosses the streambed and also up the slopes if necessary it will be grouted.

For greater assurance that a watertight joint will exist between core and foundation, concrete cutoff walls will be built in the bottom of the trench across the streambed and up the slopes. These walls will extend in dowel fashion, so to speak, into both foundation and core thus breaking the joint between the surfaces and cutting off any water following the rock surface. With a foundation as described, and the methods to be used for bonding the dam thereto, it does not seem as if there could be any danger to the structure from this source.

In conclusion, the results of the analyses of the proposed dam, regarding its stability, show that all the criteria laid down by the best practice for a safe structure of this type have been complied with. Firstly the dam will rest on a solid rock foundation to which it will be thoroughly bonded. Secondly it is of heavy section having a substantial factor of safety, with its toes reinforced with rock-fill and masonry and its faces protected from erosion etc. by an adequate rock-fill rip-rap; Thirdly, it will have no outlet pipes or any other openings to threaten its safety. Fourthly, it will have an ample spillway located away from the dam. Fifthly, it will have a high factor of safety against high water and wave action over topping it, and last but not least, its construction will be of such a type that when completed, its stability can be considered as already tested and assurance given that from that time forward it will be ready to carry the burden for which it was designed.

In view of these facts and assuming that the construction work will be faithfully performed in the manner specified, the plans and specifications are recommended for your approval with the suggestion that consideration of the flashboards be deferred pending filing of the details as explained on page five.

In making this recommendation, it may be stated that in the analyses of the plans and spec-

fications and also in comparing the plans with those of other dams of the same type that are rendering good service, the heavy responsibility placed upon the County has always been kept in mind because of the magnitude of the proposed structure, its rather novel type of construction in this locality, and the consequences that might follow its failure.

Respectfully submitted,

James L. Tighe.

Hampden County Dams 1928 Tighe Report



1928 Reports

Report filed December 12, 1928 by James L. Tighe. A total number of 213 dams were inspected.

Dam	Hampden County
-----	----------------

025-073

**INSPECTION
REPORT
HAMPDEN COUNTY DAMS
1928**

Filed, December 12, 1928.

TIGHE & BOND
CONSULTING ENGINEERS
189 High Street, Holyoke, Mass.

CONTENTS.

INTRODUCTION.....	PAGE 1
AGAWAM.....	" 3
BLANDFORD.....	" 3
BRIMFIELD.....	" 3
CHESTER.....	" 4
CHICOPEE.....	" 5
EAST LONGMEADOW.....	" 7
GRANVILLE.....	" 7
HAMPDEN.....	" 8
HOLLAND.....	" 8
HOLYOKE.....	" 8
LONGMEADOW.....	" 9
LUDLOW.....	" 9
MONSON.....	" 9
MONTGOMERY.....	" 10
PALMER.....	" 10
RUSSELL.....	" 10
SOUTHWICK.....	" 11
SPRINGFIELD.....	" 11
TOLLAND.....	" 12
WALES.....	" 13
WESTFIELD.....	" 13
WEST SPRINGFIELD.....	" 13
WILBRAHAM.....	" 14
CONCLUSION.....	" 15

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 11th, 1928.

The Hon. the Board of County Commissioners
of Hampden County, Massachusetts,
George S. Cook, Chairman.

Dear Sir:

As required by law and in accordance with your instructions I have made an inspection of all the dams in Hampden County relative to their condition and safety and report as follows:

The total number of dams inspected was 213, or 82 less than the total number inspected and recorded in the report of 1925, entitled "Report Hampden County Dams 1925," now on file in the archives of the county.

The reason for this difference in number is because the inspection made in 1925 was the first under the amended law and, therefore, for the purpose of record it was thought advisable to extend it to all the dams in the county, even to those outside the legal requirements, such as those not forming ponds, derelicts, etc., whereas in the recent inspection the latter classes were disregarded entirely.

The 213 dams inspected are located as to number in the different towns of the county as follows:

Agawam	6
Blandford.....	6
Brimfield.....	8
Chester.....	5
Chicopee.....	27
East Longmeadow.....	1
Granville.....	6
Hampden.....	9
Holland.....	1
Holyoke.....	11
Longmeadow.....	2
Ludlow.....	8
Monson.....	33
Montgomery.....	3
Palmer.....	14
Russell.....	7
Southwick.....	4
Springfield.....	19
Tolland.....	5
Wales.....	10
Westfield.....	9
West Springfield.....	15
Wilbraham.....	4

213

With the exception of a few small ice-ponds not recorded in the 1925 report and those built since then, the specific locations, length, hight, type, ownership and pondage of all the above dams are described in the report of 1925 and, therefore, recapitulation here is unnecessary.

The dams built since 1925 and the other small ice dams referred to will be recorded in the appendix to the 1925 report where it seems it would be advisable to record all dams built in the future, since by so doing the records of each dam will be more convenient and accessible when together than if scattered over different inspection reports.

AGAWAM.

Five of the six dams inspected in the town of Agawam are in fair condition, while the sixth, which belongs to the Agawam Sportsman's Club has, instead of being repaired, been put out of service by making an opening in the structure and drawing down the pond.

The repairs advised by the county on the Agawam Company Dam #2 have been made. It seems that this structure has changed ownership and belongs now to the Springfield Ice Company, Springfield, Mass.

BLANDFORD.

Of the six dams inspected in the town of Blandford only one is in poor condition, namely: the Charles A. Brown dam. As this structure, however, is only about six feet in high and the pond formed thereby small and shallow, it does not appear as if any material damage would be caused by its failure.

Repairs had been made on the Albert Gibbs dam and the Mrs. E. K. Lincoln dam as advised by the county, while the Arthur Lee dam, instead of being repaired, has been abandoned and an opening made through the structure for the free passage of the brook.

BRIMFIELD.

The eight dams in the town of Brimfield are now in fair condition, as the three that were considered somewhat unsafe and whose failure might cause damage to the highways, namely: the J. N. Pelletier dam; the F. F. Isaacs dam and the L. D. Farrer dam, have been put in repair as advised by the county. It appears that the J. N. Pelletier

dam has changed ownership within the past year and that it now belongs to Lowell Wilcox, Brimfield, Mass.

While plans have been approved by the county for the reconstruction of Little Alum Pond dam, the work has not been started as yet. Since, however, as the spillway has been cleared of debris, widened, and deepened somewhat, its condition, at least from a safety standpoint, has been improved.

From certain evidence obtained at the time of the inspection it appears that this dam and pond do not belong to William Duprey, as stated in the 1925 inspection report, but to the Fiskdale Finishing Company and the Winchendon Toy Company, the latter purchasing a half interest in the water rights from the Fiskdale Finishing Company in July of the present year.

In regard to the W. B. Cheney dam, this requires some minor repairs which were shown and explained to Mr. Cheney who was present when his dam was being inspected and who agreed to have the repairs made within a short time.

CHESTER.

The five dams inspected in the town of Chester are in fair condition, repairs having been made following the 1925 inspection on the E. L. Alderman dam, the A. F. Pierce dam and the Hamilton Emery and Corundum Company dam. The Theodore Steinhart dam not in use at the time of the 1925 inspection has become dilapidated since and can be considered a derelict.

While the Chester Municipal Water Works dam is safe, there is some erosion between the joints of the stonework, etc. along the crest of the spillway in which some of the stones are loose. This erosion should be stopped by pointing the joints and resetting the stones in cement mortar.

CHICOPEE.

Of the twenty-seven dams in Chicopee which include those on the Chicopee river within the boundary lines of the city, all are in fair condition with the exception of a few ice dams which require attention. These are the Robert and Edward Bemis dam which shows a seepage along the downstream toe toward the west end of the structure and some erosion of the embankment; the F. X. Desmarais dam for which a surface spillway was recommended but not constructed and another ice pond dam belonging to the estate of John H. Ash.

This latter structure, which was not discovered until the recent inspection, is not included in the report of 1925. It is located on the same brook as the Hampden Bleachery dam at a point about two thousand feet upstream from the latter and about five hundred feet west of the Chicopee standpipes. Its drainage area is very small, being not more than a quarter of a square mile, and the pond formed thereby covers about three acres.

The embankment is in poor condition showing considerable erosion on the downstream slope. It is recommended that repairs be made thereon and a surface spillway added to supplement the present overflow pipe. Should repairs not be made on the structure, the pond should be emptied for if the dam should fail with the reservoir full some material damage might be done to the Hampden Bleachery plant downstream.

About two hundred feet downstream from the Stephens Arms dam described in the appendix to the 1925 report, at a point where the drainage area of the brook is about one quarter of a square mile, is a small concrete dam belonging to J. T. Prosser of the Chicopee Mfg. Co., Chicopee, Mass. Its length is about sixty feet and height five and one half feet. The pond formed thereby is a small pleasure pond.

Farther downstream a distance of three hundred and fifty feet or thereabouts is another small concrete dam belonging to J. T. Prosser. It is fifty feet

in length and about five feet in hight. This dam is in poor condition and forms no pondage. While neither structure is subject to inspection, nevertheless it was thought advisable to make a record of both.

In regard to the other dams about which notices were sent to the owners by the county regarding their condition, some have been put in repair and others put out of commission entirely.

The new Chicopee Municipal dam completed in 1927 is located on Cooley Brook about one thousand feet upstream from the present water works pumping station, or five thousand feet upstream from the confluence of Cooley Brook with the Chicopee River.

It is an earthen embankment having a heavily reenforced concrete core wall of the flexible type, so called, since it is only one foot in thickness. The wall was extended three feet below the natural surface where it was rigidly connected with steel piling driven from thirty to thirty-five feet into the ground.

The length of the dam along its top is five hundred and fifty feet and its hight above the streambed forty-six feet. Its width on top is twenty-two feet with slopes three and three and one half on one on the upstream side and two and one half on one on the downstream side. There is a berm five feet wide on each slope and the upstream slope is protected from wave action by a concrete facing six inches in thickness.

The spillway and spillway channel are located at the west end of the dam and built of concrete. The width of the spillway is forty-five feet and its crest eight feet below the top of the dam. The reservoir formed by the dam covers about thirty acres, has a capacity of about one hundred and thirty-five millions of gallons and a watershed of four square miles.

About five hundred feet east of Sheridan Street in Chicopee Falls, on a small brook which flows between Sheridan Street and Morton Brook to the Chicopee River, is located a small ice pond dam belonging to William D. Slate. Its drainage area is about one square mile and at the point where the dam is constructed less than half a square mile.

The dam was completed in 1926 and is an earth embankment with a concrete core one foot in thickness. Its length is about sixty-five feet, high above the streambed eight and one half feet and width on top five feet with slopes from two to two and one half on one on the upstream side and two on one on the downstream side. At the east end of the structure is the spillway, built of concrete. Its crest is three feet in width and two and one half feet lower than the top of the dam. There is also a six inch gated iron drain pipe laid through the base of the dam.

EAST LONGMEADOW.

There is but one dam located in this town, namely: the Smith Ice Pond Dam and since this is now a derelict not backing up any water, inspection of it was unnecessary.

GRANVILLE.

The six dams in the town of Granville, namely: the Springfield Water Works Borden Brook reservoir dam, the Westfield Water Works Intake dam, the R. B. Cooley dam, the Noble and Cooley Drum Shop #1 and #2 dams and the John Degano dam, are in good condition. The last named has been reenforced during the year by the construction of a concrete wall on the upstream face.

HAMPDEN.

Of the nine dams in this town, those requiring attention as advised by the county, have been repaired with the exception of the Anna Carmody dam. No attempt had been made to make any repairs on this and since the sawmill attached is apparently no longer a going concern it looks as if the dam with its appurtenances will be allowed to join the derelict class.

While some repairs were made on the H. Earl Kimball dam there is still, along its west end foundation, a small leakage which does not, however, appear to be serious.

HOLLAND.

In the town of Holland there is only one dam subject to inspection, namely: the Hamilton Woolen Company structure which is in good repair.

HOLYOKE.

The eleven dams in Holyoke are in fair condition. One of these, the Whiting Street storage masonry structure is subject, year after year, since it was constructed in 1888 to ice thrust, thus necessitating the cutting of the ice and keeping an open channel along the face of the structure each winter. The advisability of increasing the safety factor against this ice thrust is at present under consideration by the Water Department together with some other improvements to be made thereon.

The State Reservation or Bray Lake Dam, of which the spillway retaining walls were found when inspected in 1925 to be in poor condition, has been put in proper repair.

LONGMEADOW.

The two dams in the town of Longmeadow, namely: the H. L. Handy dam and the Club Realty Company dam, are in fair condition. In the spillway discharge culvert of the former, however, some debris has accumulated which, it is recommended, should be removed.

LUDLOW.

Of the eight dams in the town of Ludlow, four are in fair condition, namely: the Ludlow Mfg. Associates structure #1 on the Chicopee River, the City of Springfield Ludlow reservoir dam, the Elmer H. Carver dam and the Anthony Kowalzik dam. The latter structure was put in repair after the owner was advised of its condition following the 1925 inspection.

While the Samuel Radnor dam is in fair condition, the repairs recommended by the county following the 1925 inspection, especially for increasing its factor of safety against high water overtopping it, have not been made. Since 1925 it appears the dam has changed ownership and that now the structure belongs to Samuel Block, 642 Dwight St., Springfield, Mass.

One of the three remaining dams is a derelict and forms no pondage, while the other two are being allowed to deteriorate and therefore will soon be in the same class.

MONSON.

This town has thirty-three dams, the largest number in the county, all of which are in fair condition with the exception of a few that require attention, namely: the Lyman C. Flint dam upon which some, but not sufficient, repairs had been made following

the 1925 inspection; the James J. Burdick dam; the Ricketts & Shaw dam, and the Judson R. Calkins dam.

The dams repaired, as advised by the county, were the W. C. Moulton dams #1 and #3; the Ralph Van Wagner dam; the Anna D. Nicolet dam and the C. P. Bradway #2 dam. The repairs on the last named structure are not sufficient and the further repairs required were explained to Andrew McGill, Monson, Mass., Box 68 R.F.D.2, who was around at the time of the inspection and who claimed to have an interest in the property. The Fearing Whitten Company dam seems to be abandoned as the pond has been drawn down and a passageway opened through the structure for the free discharge of the water.

MONTGOMERY.

The three dams in this town that come under the law of inspection belong to the City of Westfield Water Works. With the exception of some pointing of joints required in the masonry of the Intake dam under the crest of the spillway, all three structures are in good condition.

PALMER.

Inasmuch as the repairs on and additions to the dams requiring such had been made as advised by the county, all of the fourteen dams in the town of Palmer are in fair condition.

RUSSELL.

A special report that speaks for itself has been filed with the county only a short time ago,

relative to the stability, etc. of one of the dams in this town, that is, the Westfield River Paper Company dam across the Westfield River. The other six dams, namely: The Chapin & Gould and the Strathmore Paper Company dams on the Westfield River; the Springfield Water Works Intake dam on Little River; the town of Russell Water Works dam on Black Brook and the Strathmore Company's two small dams, one on the outlet of Worondake Lake (Hazzard Pond) and the other on Potash Brook, are all in fair condition.

Adjoining and under the highway bridge twenty-five feet downstream from the spillway of the Worondake Lake dam there is considerable debris, apparently the remains of an old bridge, which should be removed and it is suggested that the Selectmen of the town of Russell be advised about the matter.

SOUTHWICK.

The four dams in the town of Southwick are in fair condition, with the exception of the Charles D. Rood dam upon which no repairs have been made although the owner was advised about the matter following the 1925 inspection. It is now practically an abandoned structure and because of the small pondage formed no material damage would be done thereby if suddenly released. The dam henceforth can be placed in the derelict class. From some inquiries made during inspection, it was learned that the owner of the structure is L. F. Hosmer, Southwick, Mass.

SPRINGFIELD.

The nineteen dams in Springfield, including the Indian Orchard Company dam on the Chicopee River, are in fair condition as the repairs, etc. advised by the county on those requiring such, have been made practically in every case, except on those no longer to be maintained and allowed to become derelicts.

The Fred J. Richards log crib dam across Mill River near its mouth is one of those that were in bad condition in 1925 and upon which no repairs have been made since. If, however, this structure should suddenly fail and go out no material damage would be caused thereby.

The surface spillway advised by the county to be added to the Chicopee Water Works Abbe Brook dam had not been constructed. The whole property, however, has been sold during the year to the Hogan Bros. who live nearby. In going over the matter with the new owners at the time of the inspection, they very willingly agreed to construct the surface spillway in the manner as advised by the county.

While the Edward Fitzgerald #1 and #2 dams are in fair condition, there are fish screens across and adjacent to the crest of each spillway. These screens should be located farther downstream in order not to retard the free passage of the water.

In regard to the Antonio Gaimari ice dam, about which the owner seems to have some misunderstanding with the Drainage Department of the City of Springfield, the well and culvert used as an overflow should be cleared of some debris collected therein.

TOLLAND.

The five dams in the town of Tolland are in fair condition, although some minor repairs are needed on the Frank B. Deeming dams #1 and #2. These repairs were explained to the owner at the time of the inspection and he said he would make them before the winter set in.

In regard to the W. A. Garigue dam, the poor condition of which was drawn to the attention of the owner by the county, instead of repairing this structure a free passage was made through it and the pond drawn down.

WALES.

In general the ten dams in this town are in fair condition as repairs have been made on the J. C. Squier dam and the Wales Woolen Company dam as advised by the county. The repairs on the latter are rather of a temporary character and if the pondage formed is to be maintained without damage to the adjoining highway, repairs of a more substantial nature will have to be made.

While the Shaw Manufacturing Company dam over the spillway of which the highway is carried, is in fair condition, flashboards three and one half feet in high have been placed on the spillway which do not give sufficient clearance between spillway and bridge. These flashboards should be reduced to at most two feet in high and the Board of Selectmen should be advised accordingly. The Selectmen should also be advised about the removal of debris, etc. from the site of the H. P. Marcy dam. This debris narrows and obstructs the waterway under the highway bridge at this point.

WESTFIELD.

With the exception of the William Cunningham dam #1 upon which some minor repairs had been advised but have not been made as yet, the nine dams in Westfield are in fair condition. Those upon which repairs have been made as advised by the county are: the Crane & Co. dam; the S. Saloomey dam; the William Cunningham dam #2; the J. C. Bushman & Sons Tobacco Co. dam and the Westfield River Realty Trust dam across the Westfield River at Westfield.

WEST SPRINGFIELD.

Of the fifteen dams in the town of West Springfield three are listed in the 1925 inspection report under "The Westfield River dams" and are, the

Ramapogue Ice Co. dam and the American Writing Paper Co. dams #1 and #2. The two latter have changed ownership and now belong to the Strathmore Paper Co. Following the 1925 inspection considerable repairs had been made on the #1 dam and further repairs would have been made the present year, were it not for the continual high water in the river throughout the summer. In regard to the #2 dam which was in poor condition in 1925, inasmuch as there have been no repairs made on it since, it can be considered a derelict.

The Ramapogue Ice Co. dam is not in very good condition as its crest is sagging and getting out of alignment, thus showing a certain disintegration of the timberwork of which it is constructed. In case of its not being repaired, its failure at some time can be expected if from no other cause than gradual decay. Since its maximum height is not over seven feet however and the pond formed by it is small, in case of the structure failing suddenly it does not appear as if any material damage would be done by the released water.

Two of the four dams belonging to the West Springfield Water Works, namely: the Bear Hole dam and that farther upstream known as #4 dam, require repairs unless it is the intention to abandon them since their storage capacity is not of much account and since it appears they were purchased not for utility purposes but for the protection of the watershed.

Repairs have been made on the Allen Bros. and the Felix Lyncosky ice dams as advised by the county. It appears that the Allen Bros. have sold their dam and ice plant to A. & S. Henry, Elm St., West Springfield, Mass.

At the headwaters of Wolf Swamp Brook, on which is located the Springfield Country Club dam, the Felix Lyncosky dam and the Springfield Ice Company dam, is an ice dam belonging to Joseph Drobat, Morgan Road, West Springfield, Mass., which is not recorded in the 1925 report. It was built

about ten years ago and is four hundred feet or thereabouts in length and five feet in height with a drainage area contributory of less than a quarter of a square mile. Its height, drainage area and small pondage show that the structure does not come within inspection requirements, nevertheless, it was thought advisable to make a record of it.

WILBRAHAM.

The four dams in the town of Wilbraham are in fair condition. Two of these, namely: the Ludlow Mfg. Associates' Redbridge dam and the Collins Mfg. Co. dam are described in the 1925 report under the "Chicopee River Dams." The third, namely: the Leroy H. Gates dam #1 described as a derelict in the same report has changed ownership and now belongs to the Collins Mfg. Co. who had the structure repaired in 1927.

In the making of these repairs a new spillway forty-three feet in length and eleven feet in height above the stream-bed or two feet higher than the old spillway, was constructed of concrete in which ten foot stop planks are placed toward the north end. The embankment, which was raised five feet higher than the crest of the spillway, is now five hundred and fifty feet in length. From the gatehouse, which is built in the dam, a pipeline is laid for conveying water to the Collins Mfg. Co. paper mill. The area of the pond formed by the dam is about five acres.

The fourth is an icepond dam belonging to Oliver L. Green, North Wilbraham, Mass., and is an embankment seventy feet in length, fifteen feet in height and twenty feet in width on top. It is located near the highway at a point about a mile southeast of North Wilbraham on a small tributary of Twelve Mile Brook from the south. The surface area of the pond formed by the dam is only about an eighth of an acre and the watershed less than a half a square mile. The structure, although in existence for years, was not discovered until the recent inspection and therefore is not described in the 1925 report. Because of the very small pondage failure of the structure would cause no material damage.

In conclusion it may be stated that on the whole the dams in Hampden County are in fair condition

in regard to their stability and safety. The special attention given by the Commission to this part of the county work has shown very satisfactory results. This was demonstrated in the phenomenal storm which occurred in November of last year when out of the two hundred or more dams in Hampden County not a single one was among the many failures of dams all over New England.

And at this point, regarding the stability of the dams, it should be remarked that, if analysed by modern standards, many of the older ones, constructed as they were, without any scientific design or engineering knowledge, would not meet the requirements. In such cases, therefore, judgment has to be exercised instead of mathematics.

Respectfully Submitted,

James L. Tighe

Hampden County Dams 1930 Tighe Report



1930 Reports

Report filed December 17, 1930 by James L. Tighe.

Hampden County

REPORT

HAMPDEN COUNTY DAMS

1930

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 17, 1930

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. the Board of County Commissioners
of Hampden County,
Springfield, Mass.

John G. Maxfield, Chairman.

Dear Sir:

In compliance with your instructions I have inspected all of the dams in Hampden County relative to their condition and safety and report as follows:

The total number of dams inspected was two hundred and fifty-one (251) of which seven (7) have been built since the last inspection, in 1928.

In this total number are included the better class of abandoned structures which were disregarded in the 1928 inspection.

While it is not necessary to include these in every inspection, nevertheless it is advisable to check them occasionally to see if any of them might have been put into service again, likewise to see that there are no obstructions to water passing by them

through accumulation of debris, etc. which might in time cause trouble.

The seven (7) dams built since the 1928 inspection are the Korsen dam in Agawam, the Springfield Boys' Club dam in Brimfield, the Day dam in Chester, the Langewald dam and Chicopee Manufacturing Corporation dam in Chicopee, the Westfield Water Works storage reservoir dam in Granville and the Rorabaugh dam in Holland.

The latter dam, because of its small height, small pondage and small drainage area contributory, does not, apparently, come under the statute relative to the inspection of dams. Nevertheless, it was thought advisable to record it.

The Westfield Water Works storage reservoir dam in Granville, completed in November 1929, is a high structure, its top being ninety feet above the streambed. This dam has the distinction of being the highest in the county and the highest earthen dam in the state with the exception of the hydraulic fill dam, 100 feet in height, built by the New England Power Company in 1926-1927 across the Deerfield river at a point near the Vermont

line.

A description of the seven dams built since the 1928 inspection, including their location, type, length, pondage, ownership etc. will be prepared and added as Appendix No. 2 to the report, "Hampden County Dams, 1925", in which all the other dams in the county are recorded.

By adding the description of all new dams in this way, that is, in the form of appendices, to the 1925 report, the records of all dams in the county will be kept together and, therefore, more convenient to find than if scattered over different inspection reports.

Dams at the present time in course of construction are the Cobble Mountain dam and the DeBona dam. The latter is being built across Sodom brook in the town of Southwick and is practically completed.

The dams inspected, with the number
in each town or city, are as follows:

Agawam.....	8
Blandford.....	7
Brimfield.....	10
Chester.....	6
Chicopee.....	31
East Longmeadow.....	1
Granville.....	9
Hampden.....	11
Holland.....	5
Holyoke.....	12
Longmeadow.....	2
Ludlow.....	8
Monson.....	36
Montgomery.....	3
Palmer.....	18
Russell.....	7
Southwick.....	6
Springfield.....	19
Tolland.....	10
Wales.....	11
Westfield.....	10
West Springfield.....	16
Wilbraham.....	5
TOTAL	<u>251</u>

Because of the repairs that have been made since the first inspection in 1925 nearly all of the above dams forming pondage are, comparatively speaking, in fair condition as to safety.

There are, however, a few which need attention and while this was explained to those of the owners who were on the ground at the time of the inspection, I would advise that notices be sent ordering that these dams be put in such condition as to comply with the law.

A list of the dams requiring attention together with a description of their condition and the names and addresses of the owners will be submitted to the Board at a later date.

In regard to the stability of the dams, many of the older structures, built without much if any scientific knowledge, would, as stated in a previous inspection report, fall far short of the requirements.

In such cases judgment must be used, based upon careful consideration of all the conditions and especially upon possible consequences in case of failure.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1932 Tighe Report



1932 Reports

Report filed December 28, 1932 by James L. Tighe. Total number of dams inspected was 340. 40 natural ponds were inspected. Descriptive matter in this report was taken freely from the original report compiled in 1925.

Dam	Hampden County
-----	----------------

R E P O R T

H A M P D E N C O U N T Y D A M S

1 9 3 2

C O N T E N T S

INTRODUCTION.....	PAGE 1
AGAWAM.....	4
BLANDFORD.....	10
BRIMFIELD.....	16
CHESTER.....	22
CHICOPEE.....	27
CHICOPEE RIVER DAMS.....	36
EAST LONGMEADOW.....	40
GRANVILLE.....	41
HAMPDEN.....	48
HOLLAND.....	54
HOLYOKE.....	58
LONGMEADOW.....	64
LUDLOW.....	67
MONSON.....	72
MONTGOMERY.....	84
PALMER.....	88
RUSSELL.....	95
SOUTHWICK.....	99
SPRINGFIELD.....	104
TOLLAND.....	112
WALES.....	117
WESTFIELD.....	122
WESTFIELD RIVER DAMS.....	131
WEST SPRINGFIELD.....	135
WILBRAHAM.....	141
CONCLUSION.....	143

JAMES L. TIGHE

CONSULTING ENGINEER

CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 790

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER

AM. SOC. C. E.

INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

MEMBER

BOSTON SOC. C. E.

ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 28th, 1932

The Hon. The Board of County Commissioners,
Hampden County,
Springfield, Massachusetts.

Edward J. Stapleton, Chairman:

Dear Sir:

In accordance with your instructions and in pursuance of the provisions of Section 45, Chapter 253 of the General Laws and amendments thereto, I have made an inspection of all the dams in Hampden County relative to their condition and safety and report as follows:

The total number of dams inspected was three hundred and forty, of which two hundred and forty-two back up water and form ponds, while the remainder or ninety-eight, which are derelicts, have openings through them and form no pondage.

In 1925 when the original inspection was made of all the dams in Hampden County, a report containing a description of the location, type, size and condition of every dam inspected was filed with the County. Inasmuch as the locations and substantially the types and sizes of these structures have not changed since then, it will be found that a great deal of the descriptive matter in this report has been taken freely from the report of 1925.

The dams built and the few smaller ones discovered since then, some of which are described in appendices to the 1925 report, are described in their proper places and under their proper headings in the present report.

In the arrangement of this report the dams located in each town are listed under the names of the owners and the towns follow each other in alphabetical order, beginning with Agawam and ending with Wilbraham.

In the arrangement of the dams, where there is more than one on a stream they are described in the order of their proximity to the mouth of the stream. The dams on the main stream are always described first and then followed by those on its tributaries. The only exception to this rule is in the case of the dams on the Chicopee and Westfield Rivers which, although noted in the towns in which they are located, are described under the headings "Chicopee River Dams" and "Westfield River Dams". Again, where a dam is built across a stream that forms the boundary line between two towns, thus having a part of the dam in each town, it is described under that town in which the industry or plant attached is located. In order to make provision for the description of new dams that may be built within any reasonable time, blank pages are inserted for this purpose at the end of each town.

At the time of the inspection the name of the owner of each dam was ascertained together with his post office address, but no effort was made to verify the ownership by examination of titles in the Registry of Deeds.

In case however of an error in the ownership, the location of each dam is so definitely fixed that it can always be easily traced. As a means to this end, not only is the location of every dam on the stream given, but in most cases, its situation with reference to some local place-name, village, highway, or outstanding feature of the topography around.

The names of the streams given are those on the state topographical maps and in the case of streams unnamed on these maps, the names by which the streams are locally known.

With regard to the sizes of the dams, except where the safety of the structure was in question, no pretensions are made that the measurements given are exact. They are near enough however, as approximate measurements represent to the mind the magnitude of a structure just as well as if the measurements were given to a high degree of accuracy.

Where the length and height of a dam are given, these are respectively the maximum measurements of the structure along its top and the maximum height of its top above the natural streambed. In the case of a spillway dam, the crest of the spillway is considered the top.

While measurements of the dams were made in the field, the areas of the ponds formed by them were only estimated except in the case of some of the larger ponds where the areas were taken from various records.

The drainage area contributory to the dams have all been computed from the state topographical maps, except those of the Connecticut and Chicopee Rivers which were taken from state records.

Although the law of inspection does not apply to natural ponds, that is bodies of water not raised by dams, nevertheless it was thought advisable to include them in this report in order that information concerning them might be readily available.

In the following table the dams in each town are classified under three headings: "Dams Forming Ponds", "Dams No Longer Forming Ponds", and "Total Number Of Dams". The number of natural ponds in each town is also in this table.

T A B L E

NAME OF TOWN	DAMS FORMING PONDS	DAMS NO LONGER FORMING PONDS	TOTAL NUMBER OF DAMS	NATURAL PONDS
Agawam.....	10	3	13	0
Blandford.....	5	10	15	2
Brimfield.....	12	5	17	1
Chester.....	7	6	13	1
Chicopee.....	26	5	31	0
East Longmeadow...	0	1	1	0
Granville.....	9	13	22	2
Hampden.....	12	3	15	0
Holland.....	3	5	8	2
Holyoke.....	12	2	14	0
Longmeadow.....	3	1	4	0
Ludlow.....	8	1	9	7
Monson.....	34	5	39	2
Montgomery.....	5	2	7	1
Palmer.....	19	3	22	3
Russell.....	8	0	8	0
Southwick.....	6	5	11	2
Springfield.....	19	2	21	10
Tolland.....	6	5	11	2
Wales.....	8	5	13	0
Westfield.....	12	11	23	3
West Springfield..	13	3	16	0
Wilbraham.....	5	2	7	2
TOTAL	242	98	340	40

A G A W A M.

There are thirteen dams in Agawam, ten of which are on Three Mile Brook and its tributaries, and three on Still Brook and its tributaries.

In addition to these are the three dams across the Westfield River, which divides Agawam from West Springfield, namely the Ramapogue Dam and the two Strathmore Paper Company Dams, which are described under the Westfield River Dams.

Another structure which lies partly in Agawam is the Springfield Water Works Provin Mountain covered reservoir. This structure is almost equally divided by the boundary line between Agawam and Westfield but is described under the latter town.

L. L. WHITMAN DAM.

Three Mile Brook rises about one and one-half miles northwest of Agawam Center and flows southeasterly, emptying into the Connecticut River north of Riverside Park. It is three miles in length and has a total drainage area of about ten square miles.

At a point about five hundred feet from the mouth of the brook, where the drainage area is practically the total drainage area of the brook, there were formerly located a dam and paper mill belonging to L. L. Whitman. Both the dam and the mill were abandoned years ago, and only traces of the establishment now remain.

BATTISTA BONOMI DAM.

On the north tributary of Worthington Brook, which in turn is a tributary of Three Mile Brook, is an ice pond dam belonging to Battista Bonomi, Agawam, Mass. The dam is located at Hubbard Corners where the drainage area contributory is about two-tenths of a square mile. The pond formed covers about a quarter of an acre and has a small capacity.

The dam is an earthen embankment faced on the upstream side by a concrete wall fourteen inches in thickness, seventy feet in length, and six feet in height, with a concrete spillway twelve feet in length built in the structure. The spillway is of ample capacity and the dam on the whole is in good condition.

HARVEY PORTER DAM.

On Tarkill Brook which is another tributary from the west of Three Mile Brook, is located a dam belonging now or formerly to Harvey Porter, Agawam, Mass. The location of the structure is about one-third of a mile upstream from the confluence of the brooks, at a point where the drainage area contributory is about three-quarters of a square mile. The structure, which is an earthen embankment that formed a pond four acres in area, has not been in use for some years and has a free water way through it.

AGAWAM SPORTSMAN'S CLUB DAM.

This dam is on another tributary of Three Mile Brook from the west, called the Agawam Company Brook. It is located about two thousand feet

upstream from the mouth of the tributary or a short distance upstream from the Agawam Company Mill, at a point where the drainage area contributory is about one and one-half square miles. It belongs to the Agawam Sportsman's Club, Agawam, Mass.

The dam is an earthen embankment four hundred and twenty-five feet in length and ten feet in height. There are two concrete spillways, one at or near the center of the dam and the other at the end of a canal three hundred feet in length, which runs from the south end of the structure.

The crests of the spillways are only two feet below the top of the dam, and if the dam is ever put in use again the embankment should be raised at least a foot, making three feet of freeboard between the spillway crests and the top of the dam.

The dam was built about 1920 and formed a pleasure and fishing pond about two and one-half acres in area. A few years ago however, a portion of the structure was removed and the brook allowed to flow free in its natural bed, so that the structure no longer backs up water.

AGAWAM COMPANY DAM.

Upstream about four hundred feet from the Agawam Sportsman's Club Dam, last described, is a mill dam forming a pond of about eight acres and having a drainage area contributory of practically one and one-half square miles. This dam is owned by the Agawam Company, Agawam, Mass., and is used to supply power to a woolen mill located about three hundred feet or thereabouts downstream. This mill was established in 1812 and is still a going concern.

The dam is an earthen embankment of heavy section, about one hundred and seventy-five feet in length and about twelve feet in height. The overflow or spillway, located at the southerly end of the dam, is a concrete structure thirteen feet in length provided with wing walls on the upstream side. The crest of the spillway is three feet below the top of the embankment.

At the upstream end of the westerly spillway wing wall some erosion of the embankment has taken place, making a furrow back of the concrete wing wall. This erosion should be checked by re-filling with suitable material and the bond between the concrete wall and the embankment made as solid and permanent as possible. At the time of the inspection the matter was drawn to the attention of the Company. With this exception the dam is in good condition.

SPRINGFIELD ICE COMPANY DAM (FORMERLY AGAWAM COMPANY DAM No. 2)

About one-half a mile upstream from the Agawam Company dam, last described, at a point where the drainage area is a little over one square mile, is a dam owned by the Springfield Ice Company, 195 Alden Street, Springfield, Mass., which purchased it over ten years ago from the Agawam Company.

It is an earthen embankment two hundred feet in length, eighteen feet in height and twenty feet in width on the top which is used as a private roadway. The spillway is located at its south end and is built of concrete. It is nine feet in length and its crest is two and one-half feet below the top of the dam. A sluice gate is fashioned in the middle of the spillway for the purpose of regulating the flow to the pond below, and the roadway is carried over the spillway by a small wooden bridge. The spillway channel is built of

stepped concrete, and concrete walls extend on both sides of the spillway and channel to a point below the toe of the dam.

There is some erosion in the embankment behind the upstream end of the southerly spillway approach wall, at the downstream ends of both spillway walls and in the flooring of the spillway channel. This erosion should be checked and the attention of the owner was drawn to it at the time of the inspection.

PAUL KORSEN DAM NO. 1.

The next dam on the Agawam Company Brook is located about three-quarters of a mile above the Springfield Ice Company dam, at a point where the drainage area contributory is not over a quarter of a square mile. This dam was built in 1929-1930 by the present owner, Paul Korsen, Gardner Street, Agawam, Mass. It forms an ice pond which covers an area of about two acres and has a capacity of about two millions of gallons.

The dam is an earthen embankment one hundred and forty feet in length, eleven feet in height above the streambed and twenty feet in width on top. A reinforced concrete core wall one foot thick extends through the entire length of the structure and from below the natural ground level to within four feet of the top of the embankment. The spillway is a reinforced concrete shaft or well, five by five and one-half feet in section, built in the face of the embankment at a point thirty feet from its north end. From this well, the top of which is three feet below the top of the embankment, a reinforced concrete culvert three feet square in section extends through the foundation to a point below the downstream toe. A reinforced concrete drain pipe twenty-two inches in diameter is laid from the well through the foundation to the upstream toe.

The owner was present during the inspection of the dam, and his attention was drawn to the advisability of protecting the ends of the dam from washouts that might be caused by surface water flowing over the natural sloping ground rising from both ends of the dam.

PAUL KORSEN DAM NO. 2.

Located at the mouth of a small brook which enters the pond formed by the Paul Korsen dam No. 1, not more than three hundred feet upstream from the latter, is another dam belonging to Paul Korsen. This dam was constructed about twenty-five years ago by one Diegal to form an ice pond. It is an earthen embankment containing a cement block core wall located about ten feet upstream from its center line. The length of the dam is about one hundred feet, the height seven feet and the width of the top, which serves as a private roadway, is about twenty feet. There are two overflows provided in the structure. The first of these is a concrete channel twenty-six inches wide and twenty-six inches deep, covered by planking to carry the roadway. The second is in the form of a circular well in the pond located forty-five feet from the north end of the dam, from which a sixteen inch corrugated iron pipe extends through the foundation of the dam.

The area of the pond formed is about three-quarters of an acre and its capacity about one-quarter of a million of gallons, while the drainage area contributory is apparently not more than one-eighth of a square mile.

SALVATORE ZERRA DAM.

On the headwaters of the Agawam Company Brook and west of Gardner Street, where the drainage area is less than a quarter of a square mile, is an ice pond dam belonging to Salvatore Zerra, Feeding Hills, Mass. This dam, built in 1925, is an earthen embankment one hundred and fifty feet in length, about eight feet in height, and is faced on the upstream or pond side with a concrete wall one foot thick. The overflow is a concrete well built into the embankment near its center. It is four feet in width and contains stop planks for regulating the height of the pond. The well is connected with a concrete culvert four feet square in section which passes through the foundation to a point below the downstream toe of the dam.

When this dam was inspected in 1928 there was only about eight inches of clearance between the pond level and the top of the dam. Upon being advised of the danger to the structure because of such small clearance, the owner raised the embankment approximately two feet, adding greatly to the safety of the structure.

The dam is in fair condition and the area of the pond formed is about one and one-half acres.

DOMINICK DI DONATO DAM.

Upstream at a point about one thousand feet from the Zerra dam, last described, where the drainage area is very small, is another ice pond dam which is owned by Dominick Di Donato, Gardner Street, Feeding Hills, Mass.

It is an earthen structure one hundred feet in length, seven feet in height and about twenty feet in width on the top. The overflow is a concrete sluice-way arranged with stop planks for regulating the height of the pond.

At the time of the inspection the owner was advised to raise the embankment so as to allow two feet of clearance between the highest pond level and the top of the dam. The area of the pond formed is about an acre and a quarter.

L. F. HART DAM.

This structure is located in the very southwest corner of the town of Agawam on a tributary of Still Brook from the west, at a point where the drainage area contributory is one-fifth of a square mile, and belongs to L. F. Hart, Feeding Hills, Mass. It forms a shallow pond about five acres in area.

The dam is an earthen embankment two hundred and fifty feet in length, three feet in height, and ten feet in width on top. Two culverts, one near each end of the dam, provide the necessary overflow. The dam is in good condition, but even if it should fail no damage of any account would be likely to result as the highway immediately downstream is higher than the pond.

W. D. RISING DAM.

This dam is on another tributary from the west of Still Brook, into which it empties about one and one-half miles upstream from the Massachusetts-Connecticut boundary line. It is located near the mouth of the tributary on which it is built, where the drainage area is about one-half of a square mile and belongs to W. D. Rising, West Street, Feeding Hills, Mass.

The dam is an earthen embankment three hundred feet in length, eight feet in height and carries the highway known as West Street on its top. The spillway is a stone culvert under the highway four feet high and five feet wide.

The structure forms what is known as Leonard pond, from which water was drawn, in the past, to run the sawmill attached. The old mill still stands but is in a dilapidated condition, and apparently abandoned for good. The dam is in good condition.

THEODORE SMITH DAM.

About one mile southwest of Feeding Hills, at a point on Still Brook where the drainage area contributory is about one and one-half square miles is a small dam now or formerly owned by Theodore Smith, Feeding Hills, Mass.

It is a small concrete gravity structure five feet high, two feet thick at the base and fifteen inches thick at the top. The spillway is about six feet in length and located in the middle of the dam. The dam requires some repairs. Should the structure fail however, because of the very small pondage formed and the flat nature of the ground downstream, no material damage would result.

B L A N D F O R D

There are fifteen dams and two natural ponds in Blandford, one on Borden Brook, one on a tributary of Borden Brook, four on Peeble Brook, one on Birch Meadow Brook, one on Pond Brook, one on Watson Brook, two on Wheeler Brook, one on a tributary of Wheeler Brook, one on Potash Brook, one on a tributary of Potash Brook and one on Freeland Brook. Besides these, there is a small portion of the Cobble Mountain Dam that extends into the Town of Blandford. As much the greater portion lies in Russell however, this dam is described under that town.

Of the natural ponds, one is on the headwaters of a tributary of Freeland Brook, and the other on Watson Brook, a tributary of Pond Brook, which, in turn, is a tributary of Peeble Brook.

CITY OF SPRINGFIELD WATER WORKS BORDEN BROOK RESERVOIR DAM.

This structure is located on Borden Brook which rises in Black Pond two and one-half miles northwest of West Granville, thence flows northeasterly and easterly to Peeble Brook which it joins to form the Westfield Little River. It is about four and one-half miles in length and has a total drainage area of ten and one-third square miles. The Borden Brook reservoir dam is located upstream about two miles from the confluence of Borden and Peeble Brooks, in close proximity to the Blandford-Granville boundary line, at a point where the drainage area contributory is eight square miles.

The structure is an earthen embankment seven hundred feet or thereabouts in length and seventy-five feet in height above the streambed, with an adequate concrete spillway at its southern end. Its width on top is twenty-four feet and its slopes one on two, the upstream slope being paved with stone.

The reservoir formed has a surface area of two hundred and thirty acres and a capacity of 2500 millions of gallons. The dam, which was built in 1909, is in good condition as are the appurtenances connected thereto.

CITY OF SPRINGFIELD WATER WORKS DAM (BATES TANNERY DAM).

On Tannery Brook, a tributary of Borden Brook from the south, at a point about one thousand feet from its mouth, and three hundred and fifty feet or thereabouts south of the highway, where the drainage area contributory is one and one-quarter square miles, is located the Bates Tannery Dam. Only traces are left of this structure, to which a sawmill and tannery were attached years ago.

The property now belongs to the City of Springfield Water Works and will be under water when the Cobble Mountain Reservoir is filled.

CITY OF SPRINGFIELD WATER WORKS DAM (CURTIS PHELON DAM).

Peeble Brook rises in the northwest corner of the Town of Blandford and flows to the southeast corner of Blandford where it joins with Borden Brook to form the Westfield Little River. It is about nine and one-half miles in length and has a total drainage area of thirty-one and three-quarters square miles. About fifteen hundred feet above its confluence with Borden Brook, at a point where the drainage area contributory is thirty square miles, are the traces of a sawmill dam which formerly belonged to Curtis Phelon, Blandford, Mass. The property belongs now to the City of Springfield Water Works and

will be submerged when the Cobble Mountain Reservoir is filled.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY THE KARR SAWMILL DAM).

About two and one-half miles upstream from the last described dam at a point where the drainage area contributory is twenty-five and three-quarters square miles, is located the old Karr sawmill dam, so called.

This dam and the sawmill attached were abandoned years ago. The property belongs now to the City of Springfield Water Works and will be under water when the Cobble Mountain reservoir is filled.

J. E. PERKINS DAM.

Upstream three-quarters of a mile from the last described dam at a point where the drainage area contributory is ten and one-third square miles, is a dam now or formerly belonging to J. E. Perkins, Blandford, Mass. To this structure were connected a grist mill and sawmill both of which went out of existence over thirty years ago. Little of the dam is now left, and no pondage is formed.

CITY OF SPRINGFIELD WATER WORKS DAM (WAITE BROS' DAM).

About three miles upstream from the last described dam, at a point in the brook where the drainage area contributory is three and three-quarters square miles are the traces of a dam which formerly belonged to F. M. & B. H. Waite, North Blandford, Mass.

The height of the dam together with the natural cascade at this point created a head of sixty feet, and the power developed ran a card factory in which a dozen of men were usually employed. The pond formed by the dam was of considerable size and known as North Meadow Pond. This pond is no longer in existence as the property was purchased some years ago and part of the dam removed by the City of Springfield Water Works.

CHARLES A. BROWN DAM.

Birch Meadow Brook rises on the west slope of Birch Hill and flows south to Peeble Brook into which it empties at a point about one thousand feet upstream from the confluence of Peeble and Borden Brooks. It is about two miles in length and has a drainage area of two square miles.

About one and one-quarter miles upstream from its mouth, where the drainage area contributory is three-quarters of a square mile, is a sawmill dam belonging now or formerly to Charles A. Brown, Blandford, Mass. This is a dry stone masonry spillway structure, backed with earth, is sixty feet in length and six feet in height. From its east end a canal extended to the sawmill, located about one thousand feet downstream, at a point near the highway.

The pond formed by the dam covers about four acres, and is now used as an ice pond. The canal and mill have not been in use for about forty years, and only a trace of the latter remains.

The dam is kept in a kind of repair for the purpose of maintaining the ice pond. It is not, however, in very good condition, nevertheless should it fail, because of the shallow pond behind it, and its proximity to Cobble Mountain reservoir no damage would result.

HIRAM L. BLAIR ESTATE DAM.

Pond Brook rises on the north slope of Barnes Mountain in the town of Tolland, flows northerly and easterly to Peeble Brook into which it empties at a point about three miles from the mouth of the latter. Pond Brook is five miles in length and has a total drainage area of eleven and three-quarters square miles.

About two miles upstream from its mouth or about one-half mile south of Blair Pond, at a point where the drainage area contributory is six square miles, is a dam belonging now or formerly to the Hiram L. Blair Estate, Blandford, Mass. This is a dry stone masonry structure, fifty feet in length and twenty feet in height. The dam is in a dilapidated condition and backs up no water. The mill which is now a derelict has not been in use for thirty years.

CITY OF SPRINGFIELD WATER WORKS DAM (PEEBLES DAM).

Watson Brook rises on the southwest slope of Walnut Hill, flows southeast through Blair Pond, and empties into Pond Brook at a point about one and one-half miles upstream from the confluence of Pond and Peeble Brooks. It is two and one-half miles in length and has a total drainage area of four square miles.

About one thousand feet upstream from the mouth of Watson Brook, or five hundred feet from Blair Pond, at a point where the drainage area contributory is four square miles, is a sawmill dam which formerly belonged to Sylvester Peebles, Blandford, Mass., but which now belongs to the City of Springfield Water Works.

It is a dry stone masonry structure one hundred feet in length and eighteen feet in height. At its west end is located a spillway which is twenty-five feet in length. The sawmill attached to the dam is practically all gone with only traces of it left. The penstock which connected the dam and the mill is filled with debris, and the spillway covered with a growth of brush. This dam is now a derelict and forms no pondage.

ARTHUR LEE DAM.

Wheeler Brook rises in a small pond just across the Blandford-Otis boundary line in the town of Otis, thence flows easterly into Blandford to Peeble Brook into which it empties at North Blandford Center. Wheeler Brook is one and three-quarters miles in length and has a total drainage area of two and three-quarters square miles.

Upstream about one thousand feet from its mouth, at a point where the drainage area is a little less than two and three-quarters square miles, is located a dam belonging now or formerly to Arthur Lee, North Blandford, Mass.

This is a dry spillway structure with a log crest, backed with planking and earth. Its length is eighty feet and its height eight feet. From its north end, water was conveyed in a canal to the carriage factory, located about sixty-five feet downstream. This industry passed out of existence some years ago and the dam is now a derelict and forms no pond.

ALBERT GIBBS DAM.

About a mile upstream from the last described dam, at a point where the drainage area contributory is one square mile, is located a dam belonging to Albert Gibbs, North Blandford, Mass.

This dam was built about ten years ago to form an ice pond. It is a dry stone masonry spillway structure seventy feet in length, seven feet in height and faced upstream with planking. It was repaired a couple of years ago and is now in fair condition. The pond formed covers about two acres and is used as a fishing pond as well as an ice pond.

MRS. E. K. LINCOLN DAM.

This dam is located across the outlet of Long Pond at a point where the drainage area contributory is three quarters of a square mile. It belongs to Mrs. E. K. Lincoln, Blandford, Mass.

The dam is an earthen embankment faced downstream with stone masonry, and paved upstream with cobblestones. It is two hundred and fifty feet in length and six and one-half feet in height. The spillway is located eighty feet from its west end and is of ample capacity.

The dam was built in 1898. On request of the county it was repaired a few years ago and is now in good condition.

Long Pond is a natural pond raised by this dam built across its outlet. Its surface area is fifty-eight acres.

FRANK R. DUNLAP DAM.

Potash Brook rises in Blandford just north of Blandford Center, flows southeast into Russell and then through Russell to the Westfield River into which it empties at Woronoco. It is five and one-half miles in length and has a total drainage area of six and three-quarters square miles.

On this brook, about one mile southeast of Blandford Center, at a point where the drainage area contributory is about one-half square mile, is a dam belonging now or formerly to Frank R. Dunlap, Blandford, Mass.

The dam is divided into two parts by a short stretch of high natural ground. The western part, which is eighty-two feet in length, is built of earth paved upstream with stone, and the eastern part is built of concrete in which is located the spillway twelve feet in length. The height of the dam is thirteen feet above the bed of the brook.

The dam was built in 1914 to form a pleasure pond of eight acres for fishing, boating and bathing. The part of the dam built of earth failed some years ago and as the structure has not been rebuilt it forms no pondage.

G. F. FOWLER ESTATE DAM (FORMERLY SYLVESTER PEEBLES DAM).

On a small tributary of Potash Brook, about one mile southeast of Blandford Center, at a point where the drainage area is less than one-quarter of a square mile, is located a dam belonging now or formerly to the estate of G. F. Fowler, Blandford, Mass.

This structure is about one hundred feet in length and four feet in height with the spillway at its west end. It is in fair condition and the small pond formed thereby is used as an ice pond.

EMMA K. COWLES DAM.

Freeland Brook rises in Cochran Pond, and flows southeast and northeast through Blandford and Russell to the Westfield River into which it empties at Russell Center.. It is four and one-half miles. in length and has a total drainage area of eleven square miles.

Upstream one-half mile from the Blandford-Russell boundary line, and about two miles east of Blandford, at a point where the drainage area contributory is three and one-half square miles, is located a dam belonging now or formerly to Emma K. Cowles, Russell, Mass.

It is a log crib structure about six feet in height, located at the top of a cascade, where, with the fall in the cascade, it forms a "head" in the neighborhood of thirty-five feet. To the dam was attached a sawmill which went out of existence about twenty-five years ago. Part of the dam is now gone out and no pondage is formed by it.

BLAIR POND.

This is a natural body of water situated about two and a half miles west of Blandford Center on Watson Brook and along side of the highway leading from Blandford Center to East Otis. It has a surface area of seventy-three acres, a drainage area of three and three-quarters square miles and has no dam across its outlet.

COCHRAN POND.

Cochran Pond is a natural body of water in which Freeland Brook, already described, rises. It is located about two miles north of Blandford Center, has a drainage area of not more than one-sixth of a square mile, and, at some time in the past, had a dam about five feet in height across its outlet. This structure, however, has gone out, leaving the pond again in its natural state.

B R I M F I E L D

There are seventeen dams and one natural pond in Brimfield. Of the dams there are nine on the Quinebaug River and its tributaries, four on Elbow Brook and four on Blodgett Mill Brook. The natural pond is situated on East Brook, a tributary of the Quinebaug River.

The Quinebaug River rises in the town of Wales, flows easterly and southerly through the towns of Southbridge and West Dudley into Connecticut, thence through Connecticut to join the Shetucket River which in turn finds its way into the Thames at Long Island Sound. Its total drainage area is seven hundred and twenty-five square miles, and that part in Massachusetts is one hundred and sixty-three square miles.

SNELL MANUFACTURING COMPANY DAM.

This dam is located on the Quinebaug River in East Brimfield, at a point on the stream where the drainage area contributory is fifty-five square miles, and belongs to the Snell Manufacturing Company, Snellville, Fiskdale, Mass.

It is a low log diversion structure eighty-five feet in length, and not over one and one-half feet in height, built across the stream bed which is ledge and the top of a series of cascades that create a considerable fall at this point. The structure is in good condition and because of its low height and the small pondage formed thereby, should it fail, no damage should result from the released water.

The Snell Manufacturing Company made augers and bits, in which business a considerable number of hands was employed. The establishment, however, was shut down about ten years ago, and the business moved to Snellville, a place between the village of Fiskdale and Sturbridge Center.

SPRINGFIELD BOYS CLUB DAM NO. 1.

This is a small structure built in 1930 across Mill Brook, one of the larger tributaries of the Quinebaug River, at a point about one and one-half miles east of Brimfield village, where the drainage area of the brook is about twenty-three and one-half square miles. The dam is a concrete spillway structure fifty feet in length and about three feet in height. The pondage formed by the dam is not over half a million gallons and consequently if the structure failed no material damage would be done by the released water.

SPRINGFIELD BOYS CLUB DAM NO. 2.

On Stonage Meadow Brook, which rises at the foot of Mt. Wache Oueche and flows southerly joining Mill Brook a short distance upstream from the last described dam, is located the Lombard dam so-called. This dam belongs now to the Springfield Boys Club.

It is located about two hundred and fifty feet north of the state highway leading from Brimfield Center to East Brimfield at a point where the drainage area contributory is about one and one-half square miles.

The dam is an earthen structure faced on the downstream side with dry stone masonry. It is seventy-five feet in length and fifteen feet in height. From its west end a dike six feet in maximum height extends northerly three hundred and fifty feet. This dike formed the west side of the mill pond. There is no pondage being formed now as the spillway twenty-five feet in length was breached to make a free water way through the dam. The sawmill attached

to the dam went out of service for good over fifty years ago and only traces of it are left.

LOWELL WILCOX DAM.

About five miles upstream from the Snell Manufacturing Company dam and about one-half mile southwest of Brimfield Center, where the river is called Mill Brook, and where the drainage area contributory is six and one-quarter square miles, is a dam belonging to Lowell Wilcox, Brimfield, Mass.

The structure was built in 1812, and the power developed thereby ran a sawmill and a gristmill. The dam carries the highway on its top, and is an earthen embankment faced with dry stone masonry up and downstream. Its height is thirteen feet, and the crest of the spillway is four feet below the top of the dam. The length of the dam is four hundred feet, the length of the spillway twenty-four feet and the pond formed about twenty acres in area.

The sawmill is still a going concern, but the gristmill, which was at the opposite end of the dam, has not been in use for years. Through the dam are two penstocks, one which conveys water to the sawmill, and the other which conveyed water to the gristmill.

The dimensions of the dam and spillway are ample and the structure is in fair condition, repairs being made on it a few years ago. There are flashboards on the spillway eighteen inches in height. At the time of the inspection the owner was advised that these should be taken off during the Spring flood season and at all times of high water.

MRS. FRANK CLOUGH DAM.

On a small tributary of Hollow Brook from the west on the westerly side of the highway leading from Brimfield to Wales is a sawmill dam which was built and formerly owned by Grove Bros., of Brimfield but is now owned by Mrs. Frank Clough of Palmer, Mass.

It is an earthen embankment, faced with stone on the down stream side. It is about one hundred and twenty feet in length and twenty-one feet in height. The structure is now a derelict with a free water way through it. The sawmill attached to the dam ceased to operate over fifty years ago and only traces of the building can now be found. The drainage area contributory to this dam is apparently less than one-half a square mile.

W. B. CHENEY DAM.

This structure is located in the very northeast corner of the town of Brimfield, on a tributary of the Quinebaug River. that flows through Long Pond in Sturbridge and empties into the Quinebaug about a mile downstream from East Brimfield.

The dam forms what is known as Baker Pond, has a drainage area contributory of two and one-half square miles and belongs to W. B. Cheney, Brimfield, Mass.

The structure is an earthen embankment one hundred and ninety feet in length and twenty feet in height. It is faced on both sides with dry stone masonry. The spillway is not connected with the dam, but is located about three hundred feet away from its northeast end in natural ground.

The dam has been repaired and appears to be now in a safe condition.

The old mill attached, which apparently was a sawmill, has long since gone out of existence with only traces of the foundations left.

HAMILTON WOOLEN MILLS DAM.

This structure is built across the outlet of Little Alum Pond, said outlet being a tributary of the Quinebaug River into which it empties at East Brimfield. The outlet is about two miles in length, and has a total drainage area of one and one-third square miles. Little Alum Pond is located one and one-half miles north of East Brimfield, has a surface area of sixty acres and a drainage area of three-quarters of a square mile.

It appears the ownership of the dam and flowage rights of the pond are now or have been vested in or controlled by the Hamilton Woolen Mills of Southbridge, Mass.

The dam is an earthen embankment about one hundred feet in length and nine feet in height. The spillway is in the center of the dam. As recommended by the county this spillway was repaired the past year and its discharging capacity greatly increased thus increasing the safety of the dam.

Evidently the pond was a natural body of water which was raised by the dam. At one time there was a grist mill attached but this was abandoned as far back as 1833.

E. H. MORGAN DAM NO. 1.

East Brook rises in the southeast part of the town of Warren (Worcester County) and flows southwesterly through Brimfield to Mill Brook which it joins about a half a mile south of Brimfield Center. It is three and one-half miles in length and has a total drainage area of six square miles.

Upstream about two miles from its mouth at a place called "Little Rest", where the drainage area contributory is three and three-quarters square miles, is located a dam belonging now or formerly to E. H. Morgan, Brimfield, Mass.

It is an earthen embankment with dry stone facing up and down stream, one hundred and twenty feet in length and eight feet in height. The structure is not now in use as an opening has been made through the dam for the free discharge of the brook.

The plant connected with this dam, in the past, made Hames and Shoe Nails, and it was here where the Concord Hames were first made. The plant, however, ceased operating years ago, and only traces of it remain.

E. H. MORGAN DAM NO. 2.

About six hundred feet upstream is dam No. 2, which also was owned by the E. H. Morgan above mentioned. To this dam a sawmill and a gristmill were attached until about thirty years ago, when both mills were abandoned. The dam is an earthen embankment about one hundred and ten feet in length and twenty feet in height. Like the last described dam an opening was made through it for the free discharge of the brook.

Some fifty years ago the establishments attached to both dams employed a number of hands and made the place a very busy little center, hence the place name "Little Rest".

M. A. GOETZ DAM.

Elbow Brook rises on the west slope of Mt. Hitchcock in the town of Monson, then flows northeast into Brimfield, and through Brimfield, to the

Quaboag River into which it empties near the east end of the Monson-Palmer boundary line. Elbow Brook is four miles in length and has a total drainage area of ten square miles.

At a point about one-half a mile from its mouth, where the drainage area contributory is eight and one-third square miles, is located a dam belonging now or formerly to M. A. Goetz, Palmer, Mass. The dam is a small concrete structure which diverts the brook water into a partly excavated basin used as an ice pond. The dam is not more than thirty feet in length, and is only three feet in height.

Since it backs up little water, and practically forms no pond, even though it suddenly collapsed no damage would result.

F. F. ISAACS DAM.

Upstream about three-quarters of a mile from the M. A. Goetz dam, last described, on the south side of the road leading from Palmer to Brimfield, at Parksville, so-called, where the drainage area contributory is six and one-half square miles, is a dam belonging to F. F. Isaacs, Palmer, Mass.

The dam is three hundred and fifty feet in length and ten feet in height. The spillway, which is forty feet in length, is located about one hundred and twenty feet from its east end. About ten years ago it was rebuilt of masonry backed with gravel, and is a solid piece of work. At each end of the spillway, next to the abutments, is laid a penstock through the embankment. The one on the west served a sawmill, and the other on the east end, a gristmill.

Both of these plants however ceased operating about thirty years ago and now only traces of the buildings remain. Because of the repairs made at the request of the county the dam appears now to be in a safe condition. The pond formed is about three and a-half acres and is used as a pleasure pond.

RALF P. ANDERSON DAM (HUMPAGE DAM).

About one-half mile upstream from the Isaacs dam at a place called Dingley Dell, where the drainage area contributory is three and one-third square miles, is located a dam belonging now to Ralf P. Anderson, Port Jefferson, L. I., New York, and formerly to F. R. Humpage, Palmer, Mass.

It is a dry stone masonry spillway structure backed with earth which forms a pond not over one-half an acre in area. The pond is used for pleasure purposes and until a short time ago was also used for developing power to run a small private hydro-electric plant.

The dam is ninety feet in length and thirteen feet in height built on a ledge foundation. It shows some leakage which should be checked if the dam is to be maintained. This was pointed out on the ground at the time of the inspection to a representative of the owner.

CHARLES H. KAPLINGER DAM.

On a tributary which joins Elbow Brook about a mile upstream from the last described dam is a dam belonging now or formerly to Charles H. Kaplinger, Springfield, Mass. It is located about five hundred feet from the mouth of the tributary at a point where the drainage area is one and one-half square miles.

The structure is an earthen embankment one hundred and twenty feet in length and ten feet in height with a concrete spillway ten feet in length at its south end. The spillway however, failed some time ago, making practically a free passage-way for the brook

BRIMFIELD BRICK COMPANY DAM NO. 1.

Blodgett Mill Brook rises in Worcester County, two miles southeast of Warren Center, flows southwesterly, northwesterly and again southwesterly to the Warren-Brimfield boundary line, thence through Brimfield to the Quaboag River, into which it empties near West Brimfield. The brook is six miles in length and has a total drainage area of seven and one-half square miles.

About seven hundred feet upstream from its mouth, at a point where the drainage area contributory is practically the total drainage area of the brook or seven and a half square miles, is a sawmill dam belonging to the Brimfield Brick Co., Brimfield, Mass.

It is a dry stone masonry spillway structure backed on the upstream side with planking and gravel fill. It is about ninety feet in length and nine and a half feet in height.

The spillway is twenty-five feet in length with its crest two and a half feet below the top of the dam. The pond formed by the dam covers about three-quarters of an acre.

The sawmill, which is a going concern, is located near the north end of the dam. A gated penstock about thirty feet in length is laid from the dam to the mill. The dam is in fair condition for a structure of its type.

BRIMFIELD BRICK CO. DAM NO. 2.

Upstream fifteen hundred feet or thereabouts from the last described dam, at a point where the drainage area is about seven and a quarter square miles, is a second dam belonging to the Brimfield Brick Company.

It is a small diversion dam which turns water into a canal four hundred feet in length which runs parallel to and on the north side of the brook. From the end of this canal a pressure penstock two hundred feet in length is laid down the slope to the wheel house of the brick-making plant located on the flat below.

The diversion dam, which is a spillway structure built of heavy timber planking, is fifty feet in length and nine feet in height. The spillway is twenty-five feet in length with its crest two feet below the top of the dam. The structure is in poor condition, but inasmuch as the pond formed thereby is very small should the dam fail no damage would result from released water.

BRIMFIELD BRICK CO. DAM NO. 3.

Upstream about two hundred and fifty feet from the last described dam, at a point where the drainage area contributory is about seven and a quarter square miles, is a third dam belonging to the Brimfield Brick Company.

It is a spillway structure one hundred and twenty-five feet in length and twelve feet in height built of dry stone masonry backed with gravel and planking. The length of the spillway is thirty-seven feet and its crest is two and one-half feet below the top of the dam.

The south abutment wall of the spillway above the crest is built of concrete while the north abutment wall is built of planking. At a point southerly from the southerly end of the spillway is a three foot drain or sluice way ten feet in depth with its sides planked and a sluice gate at its head. This sluice way allows the storage to be drawn upon in times of low water. The dam was built solely for the purpose of forming storage for the two dams downstream.

The dam is in poor condition at present as the timbers and planking in the sluice way are badly decayed and falling out of place. On the south side of the sluice way the embankment is worked out and the planking supporting the earth work at the north end of the spillway is breaking down.

On the whole it may be stated that the dam is in poor condition and should be put in repair if the pond is to be maintained. The pond covers about four acres.

I. D. FARRER DAM.

About three-quarters of a mile upstream from the last described dam and very near the Brimfield-Warren boundary line, where the drainage area is six and three-quarters square miles, is a dam belonging now or formerly to I. D. Farrer, Brimfield, Mass.

It is a dry stone masonry structure backed with earth and forms a pond which covers about five acres. The dam is sixty-six feet in length, twelve feet in height, and carries the highway on its top. The spillway is twenty-four feet in length and is located under the highway bridge in the middle of the structure. To this dam there were formerly attached a sawmill and a gristmill, both of which have been abandoned for years. The dam is in fair condition.

GREAT POND.

Great Pond is a natural body of water situated about three-quarters of a mile north of Brimfield Center on East Brook, which is a tributary of the Quinebaug River into which it empties about one-half mile south of Brimfield Center. East Brook is three and one-half miles in length and has a total drainage area of six square miles. The drainage area of Great Pond is five and one-third square miles, and its surface area covers about fifty acres. There is no dam across its outlet.

C H E S T E R

In the town of Chester there are thirteen dams and one natural pond, three of these dams are on the Middle Branch of the Westfield River, four on the west branch of the Westfield River, four on Walker Brook and two on Austin Brook, while the natural pond is on a tributary of the west branch of the Westfield River.

ERNEST L. ALDERMAN DAM.

The Middle Branch of the Westfield River rises in the northern part of the town of Peru, flows southeasterly through the towns of Middlefield, Worthington and Chester to the East Branch of the Westfield River, which it joins about three-quarters of a mile upstream from Norwich Bridge. It is about nineteen miles in length and has a total drainage area of fifty-three square miles.

Ascending the stream the first dam on this branch of the Westfield River is located two and one-half miles from its mouth at a place known as Littleville, where the drainage area contributory is forty-nine square miles, and belongs to Ernest L. Alderman, Huntington, Mass.

The dam is divided into two parts by a high rock located in the middle of the stream. It is a log crib spillway structure laid on ledge, planked on the upstream side and backed with earth. The length of the spillway is one hundred and twenty feet and the height ten feet. To it is attached a sawmill which is a going concern.

The structure requires some repairs to check leakage. In case however, of its failure, no damage would result from released water because of the very small pondage formed.

A. F. PIERCE DAM.

About one and one-half miles upstream from the Alderman dam, last described, at a place known as Dayville, where the drainage area contributory is forty-seven square miles, is located a dam belonging to A. F. Pierce, Huntington, Massachusetts.

The dam is a log crib spillway structure planked upstream and backed with earth. It is one hundred and fifteen feet in length between abutments, nine feet in height, and diverts water into a canal that connects with a sawmill some hundreds of feet downstream. The sawmill, which turned out chair stock, was destroyed by fire in January last but has been rebuilt.

The dam is in fair condition. It forms only a small pond and consequently in case of failure no material damage would result by released water.

DAY DAM.

This is a pleasure and ice pond dam located in North Chester about three miles upstream from the last described dam, at a point where the drainage area is thirty-seven square miles and belongs to Arthur E. and Adra L. Day, Danvers, Massachusetts.

It is a timber spillway structure eighty-five feet in length between abutments and five feet in height. It was built in 1930. The pondage formed is small and, if suddenly released by failure of the structure, no damage would result.

ABRASIVE MINING & MANUFACTURING COMPANY DAM.

The west branch of the Westfield River rises in the town of Washington, flows southeasterly through the towns of Becket, Chester and Huntington where it joins the Westfield River at Huntington Center. It is twenty-two miles in length and has a total drainage area of ninety-six square miles.

Upstream three miles from its mouth, where the drainage area contributory is eighty-seven square miles, is a dam now or formerly belonging to the Abrasive Mining & Manufacturing Company, Chester, Mass.

The dam is a log crib spillway structure one hundred feet in length and six feet in height. It failed some years ago when its central part collapsed during a flood flow and has not been repaired since. It forms no pondage now.

JACKSON MILLS EMERY COMPANY DAM.

About three and one-half miles upstream from the dam last described, at a point about one-half mile downstream from Chester Center, where the drainage area contributory is seventy-three square miles, is a dam now or formerly belonging to the Jackson Mills Emery Company. This dam is practically all gone out, and only traces remain of the mill which was attached thereto.

CHESTER ELECTRIC LIGHTING COMPANY DAM.

Upstream three-quarters of a mile from the dam last described, in Chester Center, at a point where the drainage area contributory is fifty-four square miles, was a dam which formerly belonged to the Chester Electric Lighting Company. It was only a low structure built of loose stone across the stream for the purpose of turning water into the canal that lead to the hydro-electric station. This station was dismantled a couple of years ago and the dam abandoned.

HAMILTON EMERY & CORUNDUM COMPANY DAM.

About two thousand feet upstream from the Chester Lighting Company dam, last described, at a point where the drainage area contributory is fifty-three square miles, is located a dam belonging now or formerly to the Hamilton Emery & Corundum Company.

It is a low log crib spillway structure planked upstream, eighty-five feet in length and nine feet in height. The dam is in fair condition, and diverts water into a canal connected with the Hamilton factory located six hundred feet downstream.

The pond formed by the dam is small, and in case of failure of the structure no material damage would result from the released water.

HUDSON CHESTER EMERY MILLS DAM NO. 1.

Walker Brook rises in the town of Becket one and one-quarter miles west of Becket Center, flows southeast and northeast to Chester Center where it joins the west branch of the Westfield River. It is nine miles in length and has a drainage area of eighteen square miles.

Near its mouth in Chester Center, at a point where the drainage area contributory is practically the total drainage of the brook, that is, eighteen

square miles, is a dam belonging now or formerly to the Hudson Chester Emery Mills. It is a post deck structure, laid on a ledge foundation, one hundred feet in length and six feet in height. The power developed, ran a bedstead factory which ceased operating years ago. The structure is in a dilapidated condition with its central part gone out, thus allowing free flowage of the stream.

NELSON & RICE TANNERY DAM.

About five hundred feet upstream from the Hudson Chester Emery Mills dam, last described, at a point where the drainage area contributory is practically eighteen square miles, was located a dam that belonged to Nelson & Rice and to which was attached the Nelson & Rice Tannery.

The tannery was shut down for good about twenty-five years ago. At the same time the dam was abandoned and only traces of it now remain.

WESTFIELD SAVINGSBANK DAM (FORMERLY THEODORE STEINHART DAM).

Upstream for a distance of eight hundred feet from the tannery dam, last described, at a point where the drainage area contributory is seventeen and three-quarters square miles, is located a dam belonging to the Westfield Savings Bank and formerly to Theodore Steinhart of Chester.

It is an old log crib structure backed with earth, sixty feet in length and twenty feet in height. Attached to it is a gristmill which operated until about ten years ago when it shut down for good. From the poor condition of the dam it appears as if it were abandoned. Because of the small pondage formed by the structure it does not appear that any material damage would result from its failure. Nevertheless if it is not to be maintained and kept in repair it would seem advisable to have it removed or a substantial opening made through it.

HUDSON CHESTER EMERY MILLS DAM NO. 2.

About fifteen hundred feet upstream from the dam last described, at a point where the drainage area is seventeen and one-half square miles, is located another dam belonging now or formerly to the Hudson Chester Emery Mills.

This is a log crib spillway structure one hundred and ten feet in length and ten feet in height. It was abandoned some fifteen years ago, and because of its deterioration since then holds back no pondage now. The mill attached thereto was shut down for good some twenty years ago.

TOWN OF CHESTER FIRE DISTRICT DAM NO. 1.

On Austin Brook, which is a tributary of Walker Brook, into which it empties a short distance above the Hudson Chester Emery Mills dam No. 2, last described, is a dam belonging to the town of Chester.

It is located about one-half of a mile upstream from the mouth of the brook, at a point where the drainage area contributory is one and one-quarter square miles. The structure forms the Intake Reservoir from which the water is drawn that supplies the Fire District of Chester.

The structure is built of stone masonry, is about sixty-five feet in length and twelve feet in height. The spillway which is eighteen feet in length is in the middle of the dam.

The structure is stable but requires some repairs such as pointing the joints etc.

TOWN OF CHESTER FIRE DISTRICT DAM NO. 2.

Upstream seven hundred and fifty feet or thereabouts from dam No. 1, last described, at a point where the drainage area contributory is about one square mile is located dam No. 2.

It is a cement concrete structure laid on a ledge foundation and was built in 1931 to form a water supply storage reservoir. The dam is one hundred and thirty feet in length and fourteen feet in height. In section it is three feet in width on top and eleven feet in width at bottom.

The reservoir formed filled and overflowed last Spring thus testing the stability of the structure.

ROUND HILL POND.

This is a natural pond located about one and one-half miles south of Chester, on Round Hill Top Mountain, so-called. The outlet of the pond is a tributary of the west branch of the Westfield River into which it empties at a point about one and one-half miles downstream from Chester Center.

The surface area of the pond is less than ten acres and the drainage area about one-tenth of a square mile. There is no dam across its outlet.

TOWN OF CHESTER FIRE DISTRICT DAM NO. 2.

Upstream seven hundred and fifty feet or thereabouts from dam No. 1, last described, at a point where the drainage area contributory is about one square mile is located dam No. 2.

It is a cement concrete structure laid on a ledge foundation and was built in 1931 to form a water supply storage reservoir. The dam is one hundred and thirty feet in length and fourteen feet in height. In section it is three feet in width on top and eleven feet in width at bottom.

The reservoir formed filled and overflowed last Spring thus testing the stability of the structure.

ROUND HILL POND.

This is a natural pond located about one and one-half miles south of Chester, on Round Top Mountain, so-called. The outlet of the pond is a tributary of the west branch of the Westfield River into which it empties at a point about one and one-half miles downstream from Chester Center.

The surface area of the pond is less than ten acres and the drainage area about one-tenth of a square mile. There is no dam across its outlet.

CHICOPEE

There are twenty-five dams in the City of Chicopee, nine of these are on tributaries of the Chicopee River from the south, thirteen on tributaries from the north, and three on Willimansett Brook, a tributary of the Connecticut River. Besides, there are six on the Chicopee River which are described under Chicopee River Dams.

M. SITNICH DAM.

On a tributary of the Chicopee River into which it empties from the south, at a point near Riverview Terrace five hundred feet north of Fairview Avenue, where the drainage area is not over one-quarter of a square mile, is located an ice pond dam now or formerly belonging to M. Sitnich, Chicopee, Mass.

The dam is an earthen embankment three hundred and ten feet in length and fourteen feet in height. This dam has'nt been in use, nor has it formed any pondage for some years, and the pond basin is being filled with earth.

CITY OF CHICOPEE ELECTRIC LIGHTING DEPARTMENT DAM.

On Dingle Brook, a small tributary of Chicopee River, into which it empties from the south, is a dam belonging to the City of Chicopee Electric Lighting Department. It is located about three hundred feet upstream from the mouth of the brook at a point near Front Street, where the drainage area of the brook is one and one-half square miles.

The dam is an earthen embankment one hundred and five feet in length and about eleven feet in height. It has'nt formed any pondage for years and is now a derelict with a free water way through it.

THE ROBERT AND EDWARD BEMIS DAM.

Upstream on Dingle Brook about five hundred feet from the last described dam, or three hundred feet from Front Street, at a point where the drainage area is one and one-half square miles, is located an ice pond dam now belonging to Robert and Edward Bemis, Chicopee, Mass.

It is an earthen embankment three hundred and thirty feet in length and about twenty-seven feet in height. At a point about one hundred and fifty feet from its east end, the spillway is located, which is a masonry well four feet in diameter from which a pipe is laid through the dam thirty inches in diameter. The dam was built about seventy years ago, but has been increased in section and raised in height since then until it now forms a pond which covers about twenty-four acres.

Because of seepage being observed along the toe of the dam, especially toward its west end, and in view of the large pondage formed and the damage that might result from failure of the structure, the spillway, on the advice of the county, has been lowered three feet. It may be well to mention here that the ice house attached to the pond was destroyed by fire in 1930 and has'nt been rebuilt.

J. T. PROSSER DAM NO. 1.

A small tributary of the Chicopee River from the south rises in Chicopee Falls near the Chicopee-Springfield boundary line and flows westerly through Chicopee Falls to the Chicopee River. It is about a mile in length and has a drainage area of about a square mile.

At a point about one thousand feet upstream from its mouth where the drainage area is not over a half a square mile, is located a small concrete dam now or formerly belonging to J. T. Prosser, Chicopee, Mass. It is fifty feet in length and about five feet in height. The structure is in poor condition. It has however a free water way through it and consequently forms no pondage.

J. T. PROSSER DAM NO. 2.

About four hundred and fifty feet upstream from the last described dam at a point where the drainage area is somewhat less than a half a square mile is a second dam belonging to J. T. Prosser. This is also a small concrete dam sixty feet in length and six feet in height.

It is in fair condition and forms a small pleasure pond less than one-tenth of an acre in area.

J. STEVENS ARMS DAM.

About two hundred feet upstream from the Prosser dam No. 2, last described, at a point where the drainage area is practically the same as that contributory to the Prosser dam No. 2, is a dam belonging to the J. Stevens Arms Company of Chicopee Falls.

The dam is an earthen embankment faced on its downstream side with brick masonry. It is about seventy feet in length, eighteen feet in height and nine feet in width on its top. Through the structure, at a point about three feet above the bed of the brook, is laid a wrought iron waste pipe two feet in diameter, controlled by a head gate located in a well at the upstream toe of the dam. This pipe regulates the height of the water in the pond. Besides, there is a spillway in the center of the dam, three feet in length and one and one-half feet in depth. Very seldom, if at any time, does water pass over this spillway, as the discharge from the pond is conveyed through the waste pipe. Moreover, the flow of the brook into the pond is under control and so regulated that flood water is diverted into another waterway before it reaches the pond. The area of the pond is about half an acre and it is used as a private supply for process purposes etc., at the J. Stevens Arms Company Mills. The dam is in fair condition.

DWIGHT MANUFACTURING COMPANY DAM.

Upstream at a point about two thousand feet from the Stevens Arms Company dam last described, where the drainage area is not over a quarter of a square mile, is a small dam now or formerly belonging to the Dwight Mfg. Company. It is an earthen structure two hundred and fifty feet in length and about seven feet in height.

The pond formed by the structure covers about one-third of an acre and has been used for drinking water. The dam is in poor condition and should be repaired if the pond is to be maintained.

OXFORD GOLF CLUB DAM NO. 1.

Poor Brook is a small tributary of the Chicopee River into which it empties from the south about a mile down stream from the Bircham Bend Power Company dam. On this tributary about one thousand feet from its mouth at a point where the drainage area contributory is about one and three-quarters square miles, is a dam belonging to the Oxford Golf Club.

It is an earthen embankment about one hundred feet in length and seven feet in height. The dam proper is in fair condition but the planked apron attached to the spillway requires some repairs.

The pond formed by the dam, is used as a pleasure pond and since it is very small and practically on the bank of the Chicopee River, should the dam fail no damage would result from the released water.

OXFORD GOLF CLUB DAM NO. 2.

About six hundred feet upstream from the last described dam at a point on the east side of East Main Street, where the drainage area contributory is a little less than one and three-quarters square miles, is located an ice pond dam belonging also to the Oxford Golf Club.. It is an earthen embankment, one hundred feet in length and twelve feet in height. The structure is in fair condition except at the end of the apron of the spillway where some minor repairs are needed.

EUGENE BERTRAND DAM NO. 1. (FORMERLY JOHN WYSZATYCKI DAM.)

Crowfoot Brook rises in Chicopee near the corner of Montgomery Street and Granby Road, so-called, thence flows northwesterly and southerly a distance of three and one-half miles to the Chicopee River into which it empties. Its total drainage area is about two and one-half square miles.

On the head waters of the brook about seventy-five feet east of Montgomery Street at a point where the drainage area contributory is not over one quarter of a square mile, is located an ice pond dam belonging to Eugene Bertrand of Brightwood, Springfield, Mass., and previously to John Wyszatycki, Montgomery Street, Willimansett, Mass.

It is an earthen embankment one hundred and fifty feet in length and fifteen feet in height above the streambed. The pond formed covers about an acre and a quarter.

This dam was repaired some time ago and is in fair condition except at its northerly end where the overflow channel and toe of the embankment need some repairs.

EUGENE BERTRAND DAM NO. 2. (FORMERLY JOHN WYSZATYCKI DAM NO. 2.)

About three hundred feet north of the last described dam and fifty feet east upstream from Montgomery Street, is located on a very small tributary of Crowfoot Brook, another small ice pond dam belonging to Eugene Bertrand and which formerly belonged to John Wyszatycki.

It is an earthen embankment one hundred and eighty-five feet in length and fourteen feet in height. The structure is in fair condition except that at the north end some earth re-fill is needed.

CITY OF CHICOPEE WATER WORKS DAM.

On the headwaters of Crowfoot Brook, about five hundred feet to the south of the Bertrand dam #1 above described and seventy-five feet west of Montgomery Street, at a point where the drainage area contributory is a little over one-quarter of a square mile, is located a small dam belonging to the City of Chicopee Water Works.

The pond formed by this structure was the source, some years ago, of the water supply of Willimansett, but has not been used for that purpose for a considerable number of years. After the pond was abandoned as a source of water supply, it was drawn off for good and the dam since then has become a derelict.

LUCIEN LAMIEUX DAM (FORMERLY LAMIEUX BROTHERS DAM).

On a very small tributary of the Chicopee River into which it empties from the north, at a point a short distance upstream from the concrete bridge crossing the Chicopee River at Chicopee Center, where the drainage area contributory is one-eighth of a square mile, is an ice pond dam belonging to Lucien Lamieux, Granby Road, Chicopee, Mass.

It is an earthen embankment one hundred and thirty-eight feet in length and about twenty-six feet in height. The structure was built about twenty years ago and forms a pond covering about two and one-half acres.

The surplus water from the pond is conveyed through a twenty inch pipe laid through the dam, and through a sluice-way as recommended by the county built at the north end of the structure. The dam is in fair condition.

LAWRENCE FORTIER DAM.

On another small tributary of the Chicopee River, into which it empties from the north at a point about five hundred feet upstream from the above mentioned concrete bridge crossing the Chicopee River at Chicopee Center, is a dam now or formerly belonging to Lawrence Fortier, 11 Helen Avenue, Chicopee, Mass. This dam is located about two thousand feet upstream from the mouth of the tributary, at a point where the drainage area is less than one-quarter of a square mile.

It is an earthen embankment faced upstream with a concrete wall eighteen inches in thickness. The dam is one hundred and twenty-five feet in length, eight feet in height and thirty feet in width on top, which carries a private roadway. The pond formed is shallow and about an acre in area.

The structure is in fair condition, and the waste water from the pond is discharged by a sixteen inch pipe laid through the foundation, and by a swale provided at one end of the structure. The pond was formerly an ice pond but it is now used only as a swimming pool and for pleasure purposes.

CHICOPEE MANUFACTURING COMPANY DAM NO. 2.

Hearthstone Quarry Brook is a small tributary of the Chicopee River which rises about one mile northwest of Chicopee Falls and flows southeasterly, entering the river about two thousand feet downstream from the Chicopee Manufacturing Company Dam No. 1, described under Chicopee River Dams.

About fifty feet upstream from the mouth of the brook, where the drainage area is less than a square mile, is located a dam built in 1930 by the Chicopee Manufacturing Company, Chicopee Falls, Mass., to form a storage reservoir. It is a rubble concrete gravity structure about twenty-two feet in

maximum height and eighty feet in length. The thickness at the base is thirteen feet and at the top five feet.

The dam rests upon a ledge foundation and forms a pondage of about six hundred thousand gallons.

Because of the small storage formed and its proximity to the river, should the structure fail, no damage would result from released water.

F. X. DESMARAIS DAM.

About half a mile upstream from the Chicopee Mfg. Co. dam last described, at a point where the drainage area is about one-quarter of a square mile, is an ice pond dam belonging to F. X. Desmarais, Worthington Street, Aldenville, Mass.

The dam is an earthen embankment one hundred and eighty-two feet in length, nineteen feet in height, and eight feet in width on top. The ice pond formed by the structure is about an acre in area, and the waste water therefrom is taken in a pipe or culvert laid through the dam. The dam is in poor condition around its overflow and should be repaired. To add to its safety a surface overflow in the form of a swale, should be provided at one end of the structure.

HAMPDEN BLEACHERY DAM.

On another tributary to the Chicopee River, into which it empties from the north, at a point about seven hundred feet upstream from the iron bridge crossing the Chicopee River at Chicopee Falls, is a dam belonging to the Hampden Bleachery Co., Chicopee Falls, Mass. This structure is located about five hundred feet north of Sheridan Street between Patrick and Dewey Streets in Chicopee Falls, at a point in the brook where the drainage area contributory is about one-half a square mile.

It is an earthen embankment about two hundred and twenty-five feet in length, twelve feet in height and faced upstream with a concrete wall one foot in thickness. The spillway or overflow, located near the west end, is five feet in length and built of concrete. The discharge over its crest is into an open concrete channel connected to a large culvert that crosses under the highway below. The dam is in fair condition, and the pond formed thereby covers about an acre. The pond water is used for washing purposes in the bleachery.

MRS. JOHN H. ASHE DAM.

Upstream about a half a mile from the Hampden Bleachery dam last described and about five hundred feet west of the Chicopee Water Works standpipes, at a point where the drainage area is not over a quarter of a square mile, is an ice pond dam belonging to Mrs. John H. Ashe.

It is an earthen embankment one hundred and thirty feet in length and about twenty feet in height. The pond formed by the structure covers about three acres and the spillway or overflow is a sixteen inch pipe laid through the foundation from a brick well built in the face of the structure.

The dam is in poor condition and the ice house attached was destroyed by fire a year or so ago. Because of the poor condition of the dam the pond has been drawn down to a safe level. If for any reason it should go into service again the dam should be first put in repair and made safe.

LOUIS SLATE DAM.

A small tributary of the Chicopee River rises near the junction of Fuller Road and Sheridan Street in Chicopee and flows southerly on the easterly side of Sheridan Street a distance of about one and a quarter miles to the Chicopee River. The drainage area of this brook is not over a square mile. At a point about three thousand feet from its mouth, where the drainage area contributory is less than one-half a square mile, is located an ice pond dam belonging to Louis Slate of Fuller Road, Chicopee Falls, Mass.

It was built in 1926 and is an earthen embankment with a concrete core one foot in thickness. It is sixty-five feet in length, nine feet in height and six feet in width on top. At the east end of the dam is a concrete spillway three feet in length with its crest two and one-half feet below the top of the embankment. The dam is now in poor condition and the repairs necessary to make it safe were explained to the owner at the time of the inspection. Since however, the pond formed by the dam is very small, should the structure fail no damage would result from released water.

CITY OF CHICOPEE WATER WORKS DAM NO. 1.

Cooley Brook rises in the town of Ludlow about three miles west of Ludlow Center and flows southwesterly through Chicopee to the Chicopee River, which it enters at a point about one and a quarter miles downstream from the Birnam Bend Power Company dam.

The brook is about four miles in length and has a total drainage area of about five square miles. There are three dams on this brook and its tributaries, all of which form storage reservoirs for the City of Chicopee Water Supply.

The first of these dams forms a reservoir three and one-half acres in area, and is located about three-quarters of a mile upstream from the mouth of the brook, at a point where the drainage area contributory is around four and one-half square miles. It is a composite structure built of earth and concrete, about one hundred and sixty feet in length and twelve and one-half feet in height. A concrete surface overflow, twenty-one feet in length and with its crest two and one-half feet below the top of the dam, is located at the east end of the dam. The dam is in good condition.

CITY OF CHICOPEE WATER WORKS DAM NO. 2.

About one thousand feet upstream and at the north end of the reservoir formed by the dam last described, is the new reservoir dam of the City of Chicopee Water Works. This dam, which was completed in 1927, forms a reservoir of about thirty acres in area and one hundred and thirty-five millions of gallons in capacity. The drainage area contributory is four square miles.

The dam is a rolled earthen embankment containing a heavily reinforced concrete core wall of the flexible type. This wall, one foot in thickness, extends through the entire length of the dam from about three feet below the natural ground surface to about two feet above the top of the earthen embankment. A steel sheet piling cut-off wall is rigidly connected to the base of the core wall and extends from thirty to thirty-five feet into the natural ground under the dam.

The length of the structure along its top is five hundred and fifty feet, its maximum height forty-six feet and its width on top twenty-two feet. The upstream face is divided into two parts by a berm five feet wide. The portion

below the berm has a slope of three and one-half on one and is surfaced with broken stone and coarse gravel, while that above the berm has a slope of three on one and is protected from wave action by a facing composed of reinforced slabs six inches in thickness and ten feet square.

The downstream side has a grassed slope of two and one-half on one and also contains a berm five feet in width.

Two cast iron pipe lines, one a thirty inch blow-off, and the other a twenty-four inch supply pipe are laid through the natural ground and part of the embankment to the upstream toe of the dam. These pipes are laid side by side and are provided with concrete collars.

The spillway and spillway channel are located at the west end of the dam and built of concrete. The crest of the spillway is forty-five feet in length and eight feet below the top of the core wall. The spillway channel is about two hundred and thirty feet in length and is provided with baffle piers at its downstream end where it wastes into the lower reservoir of the Water Department.

CITY OF CHICOPEE WATER WORKS DAM NO. 3.

Morton Brook is the only sizable tributary of Cooley Brook which it joins about one-half a mile from the mouth of the latter.

On Morton Brook, about a thousand feet upstream from its junction with Cooley Brook and at a point where the drainage area contributory is only about one-third of a square mile is located another dam belonging to the City of Chicopee Water Works.

This is an earthen structure faced on the upstream side with heavy cut stone masonry. Its length is thirty-seven feet and height seven and one-half feet. The spillway, built of heavy cut stone, is six feet in length and located within ten feet of the west end of the dam. The pond formed is very small being only about one-tenth of an acre in area. The dam is in good condition.

HAMPDEN BREWERY COMPANY DAM.

Willimansett Brook rises in the Chicopee Plains about a mile southeast of Fairview and flows southwest three miles to the Connecticut River into which it empties a short distance upstream from the Willimansett Bridge. Its total drainage area is four and one-half square miles.

The first dam on this brook is in Willimansett at a point a few hundred feet from the mouth of the brook, where the drainage area contributory is practically the total drainage area of the brook, and belongs to the Hampden Brewery Company of Willimansett, Mass.

It is an earthen embankment eighty-two feet in length, eighteen feet in height, and twenty feet in width on its top which carries a driveway. The spillway is in the center of the structure and is fifteen feet in length with its crest six feet below the top of the dam. The dam is in good condition and the pond formed thereby covers about three acres.

HOLYOKE ICE COMPANY DAM.

This structure is located about one mile upstream from the Hampden Brewery dam, last described, at a point where the drainage area contributory is about three and one-half square miles and belongs to the Holyoke Ice Company, Holyoke, Mass.

The structure is an earthen embankment one hundred and ninety feet or thereabouts in length, twenty-seven feet in height and thirty feet in width on top. The slopes of the embankment are three to one on the upstream side and two to one on the downstream side. In the natural ground near the southwest end of the dam is a concrete spillway from which extends an overflow channel one hundred feet in length. There is also a four foot diameter steel drain pipe encased in concrete laid through the dam. Some repairs are needed along the downstream toe of the structure especially at the end of the drain pipe.

A. A. LANGWALD DAM.

Upstream about three-quarters of a mile from the Holyoke Ice Co., dam last described, at a point where the drainage area contributory is two and three-quarters square miles, is a swimming pool dam belonging to A. A. Langwald, Holyoke, Mass. It is an earthen embankment one hundred and ten feet in length, fourteen feet in height and eight feet in width on top. Its spillway or overflow is five feet below the top of the dam.

The slopes on both up and downstream sides are very flat being about one on four and one-half. The capacity of the pond is one and a half millions of gallons.

The dam is in good condition and was built in 1929 on the site of the old earthen structure which failed in 1922. The old structure was thirty-four feet in height and formed a pondage of over fifty millions of gallons.

CHICOPEE RIVER DAMS.

There are eleven dams on the Chicopee River of which six are in Chicopee, one in Springfield, one in Ludlow, two in Wilbraham and one in Palmer.

The Chicopee River is formed by the union of the Swift, Ware and Quaboag Rivers at the village of Three Rivers in the town of Palmer from which point it flows westerly, southerly and westerly again to the Connecticut River into which it empties at Chicopee. In its course, it forms the boundary line between Ludlow and Wilbraham, Ludlow and Springfield, and about one and one-half miles of the boundary line between Chicopee and Springfield.

The Chicopee River, from its mouth to Three Rivers, is fifteen miles in length and has a total drainage area of seven hundred and twenty-one square miles. It is the largest tributary of the Connecticut River, and is also the largest river that rises within the State of Massachusetts.

DANA S. COURTNEY COMPANY DAM.

About one-half mile upstream from the mouth of the river at a point in Chicopee, where the drainage area of the river is seven hundred and eighteen square miles, is a dam belonging to the Dana S. Courtney Company of Chicopee, Mass., manufacturers of bobbins and spools.

It is a log crib structure five hundred and fifty feet in length and six feet in height built on a ledge foundation and extending in a zig-zag line across the river. The planking of the structure requires some repairs.

AMES SWORD COMPANY DAM.

Upstream about one thousand feet from the Dana S. Courtney dam last described, at a point where the drainage area contributory is about seven hundred and eighteen square miles, is located a dam belonging to the Ames Sword Company, Chicopee, Mass.

This is a stone spillway structure two hundred and eighty-two feet in length between abutments and eleven feet in height, built upon a ledge foundation. The bulkhead, from which the penstocks are laid, is located at the south end of the structure.

There are some small repairs needed on this dam which were explained to a representative of the company at the time of the inspection.

DWIGHT MANUFACTURING COMPANY DAM.

About eight hundred feet upstream from the Ames Sword Company dam, at a point where the drainage area contributory is somewhat less than seven hundred and eighteen square miles, is located a dam now or formerly belonging to the Dwight Manufacturing Company of Chicopee, Mass.

This is a stone masonry spillway gravity structure three hundred and fifty feet in length, fifteen feet in height and forms a pond of thirty-eight acres. It is laid on a ledge foundation, with its ends abutting against ledge. At the southend is the bulkhead, in which are installed the headgates for feeding the canal laid to the Dwight Manufacturing Company plant some hundreds of feet below. This canal also supplies water to other plants located along its bank. The dam is of heavy section, is in good condition and seems to be a solid piece of masonry.

CHICOPEE MANUFACTURING COMPANY DAM NO. 1.

The next dam upstream belongs to the Chicopee Mfg. Co., Chicopee Falls, It is located just below the highway bridge that crosses the river at Chicopee Falls, and has a drainage area contributory of seven hundred and fourteen square miles.

This is a stone masonry faced spillway structure backed upstream with planking and earth, three hundred and sixty-seven feet in length, and from six to ten feet in height. Its crest is built of wood laid on top of the masonry. The stone masonry facing needs pointing in places and a leak through the structure at a point about one hundred and fifty feet from its east end should be repaired. There are some other leaks also, although of smaller account, that should be repaired. The pondage behind the dam is not large.

CHICOPEE MANUFACTURING COMPANY DAM NO. 2.

About five hundred feet upstream from dam No. 1, last described, at a point where the drainage area contributory is practically the same as dam No. 1, is located the Chicopee Manufacturing Company dam No. 2.

This dam, which replaced an old log dam in 1894, is a spillway structure laid on a ledge foundation. It is three hundred and ten feet in length between abutments, and eight and one-half feet in height. The greater part, starting from the north abutment, is built of stone masonry while the remaining part next to the south abutment, is built of concrete. The downstream face of the latter shows considerable erosion, especially at the joints between the concrete and stone masonry. This erosion, while not material as yet, should, nevertheless, be looked after and checked.

BIRCHAM BEND POWER COMPANY DAM.

About two miles upstream from the Chicopee Manufacturing Company dam No. 2, at Bircham Bend so-called, where the drainage area contributory is seven hundred and four square miles, is located a dam belonging to the Bircham Bend Power Company of 73 State Street, Springfield, Mass.

This is a stone masonry spillway structure to which was added, in 1900, a concrete apron faced with vitrified brick. The length of the structure is two hundred and twenty-one feet and its height approximately seventeen feet. It is in good condition, forms a pond ninety-one acres in area, and has attached thereto, a hydro-electric plant.

INDIAN ORCHARD COMPANY DAM.

This structure is located in Indian Orchard, at a point where the drainage area contributory is six hundred and eighty-seven square miles, and belongs to the Indian Orchard Company of Indian Orchard, Mass. It is a stone masonry spillway structure built on a ledge foundation, four hundred feet in length and twenty-nine feet in height.

The structure is in good condition, forms a pond eighty-five acres in area, and has attached thereto a hydro-electric plant.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 1.

Upstream about a mile from the Indian Orchard Company dam, at a point where the drainage area contributory is six hundred and eighty-six square miles, is located a dam belonging to the Ludlow Manufacturing Associates.

This is a masonry concrete spillway structure of the Ogee type built about fifteen years ago. It is two hundred feet in length between abutments and twenty-four feet in height. The dam is in good condition, forms a pond of about ninety-five acres in area, and has attached thereto a hydro-electric plant.

COLLINS MANUFACTURING COMPANY DAM.

At North Wilbraham, where the drainage area of the river is six hundred and eighty-one square miles, is the Collins Mfg. Co. dam.

This is a masonry faced structure backed with earth, about two hundred and fifty feet in length and twenty feet in height. Along the entire length of the downstream face is a horizontal wood apron built in the form of a step thirty-six feet in width and five feet in height.

The dam is in fair condition and also the apron except that some repairs are needed at the north end of the latter.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 2.

At Red Bridge about two and one-quarter miles upstream from the Collins Mfg. Co. dam, last described, at a point where the drainage area of the river is six hundred and sixty-four square miles, is another dam belonging to the Ludlow Mfg. Associates.

The dam was built about thirty years ago and has a maximum height of fifty-one feet and a total length of about six hundred and twenty-five feet. About one half the length of this structure is an earthen embankment having a concrete core wall. This embankment is paved with granite blocks on both upstream and downstream slopes and the latter is provided with a berm. The other part is the spillway section built of concrete masonry, Ogee in type. It is three hundred and six feet in length, with its crest ten feet below the top of the embankment.

The pond formed extends within a half mile of the center of the village of Three Rivers, and covers an area of one hundred and eighty-five acres. The dam is in good condition and has attached thereto a hydro-electric plant on the Wilbraham side of the river.

OTIS COMPANY DAM.

The last dam on the Chicopee River is at Three Rivers where the drainage area contributory is six hundred and forty-seven square miles. It is a concrete masonry structure of the Ogee type, two hundred and eleven feet in length and about thirty feet in height. The pond formed by the structure covers sixty acres, and to it is attached a hydro-electric plant which furnishes energy to the company's textile mills in Three Rivers.

In the 1930 inspection of the county dams, erosion was observed at the seams and joints in the crest and downstream face of the structure. Since then the dam has been repaired and is now in good condition.

E A S T L O N G M E A D O W

SMITH DAM.

The only dam in East Longmeadow is on Pecowsic Brook. This brook rises on the northern slope of McCarthy Hill in East Longmeadow, flows westerly, following a circuitous route through the towns of East Longmeadow, Springfield and Longmeadow; then through Forest Park in Springfield to the Connecticut River into which it empties about a mile downstream from the mouth of Mill River. Pecowsic Brook is about six miles in length and has a total drainage area of six and three-quarters square miles.

About three-quarters of a mile northwest of East Longmeadow Center, near where the railroad crosses the highway, at a point in the brook where the drainage area contributory is one and three-quarters square miles, is located the Smith ice-pond dam.

This dam, at present, forms no pond as it has an opening through it for the free discharge of the brook. Years ago a grist mill and a sawmill were located here, known as the Taylor Mills.

G R A N V I L L E

There are twenty-two dams and two natural ponds in Granville. One of these ponds is the head waters of Borden Brook, which is one of the sources of the City of Springfield Water Supply, and the other is the head waters of Pond Brook. Of the dams, three are on Tillotson Brook, one on Hollister Brook, one on Dickinson Brook, one on a tributary of Dickinson Brook, four on Seymour Brook, Two on Trumbull Brook, three on Valley Brook, three on Hubbard River, one on Pond Brook, one on Borden Brook, one on a tributary of Borden Brook and one on a tributary of the Westfield Little River.

CITY OF WESTFIELD WATER WORKS DAM NO. 1. (INTAKE DAM).

Tillotson Brook rises on the northern slope of Bad Luck Mountain, flows east and southeast to Dickinson Brook, both brooks forming Munn Brook. It is about two and one-half miles in length and has a total drainage area of a little over six square miles.

Upstream about one thousand feet or thereabouts from its confluence with Dickinson Brook and about one and one-half miles northeast of Granville Corners, at a point where the drainage area contributory is six square miles, is a dam belonging to the City of Westfield Water Works, known as the Granville Intake dam. This dam forms a reservoir which covers about one and three-quarters acres.

It is a masonry spillway structure backed with earth, one hundred and forty-seven feet in length and fifteen feet in height. The structure was built in 1900 and is in good condition.

CITY OF WESTFIELD WATER WORKS DAM NO. 2. (STORAGE RESERVOIR DAM).

About two thousand feet upstream from the Westfield Water Works intake dam last described, at a point where the drainage area contributory is about five and three-quarters square miles, is located the large storage reservoir dam belonging to the City of Westfield Water Works.

It is an earthen embankment containing a concrete cut-off, eight hundred and forty feet in length, ninety feet in height and twenty-four feet in width on top. The upstream side below the water line has a slope of one on three, and the downstream side has an average slope of one on two and a quarter. The upstream slope is heavily rip-rapped with stone and the downstream slope has a stone toe.

At the westerly end of the structure is the spillway from which a channel, excavated in the natural ground, extends and connects with the brook at a point a considerable distance downstream from the dam. The spillway is sixty feet in length and its crest is ten feet below the top of the dam. It is built of concrete and the spillway channel is lined with the same material.

There are two pipes laid through the dam, one a forty-two inch concrete drain pipe and the other a twenty-four inch cast iron outlet pipe. The area of the reservoir formed by the dam is about seventy-five acres and its capacity six hundred and thirty millions of gallons.

The dam was completed in 1929 and, until the Cobble Mt. dam was completed in the early part of 1932, it had the distinction of being the highest dam in the county and the second highest earthen dam in the State.

HIGGINS DAM.

On Tillotson Brook about one-half a mile upstream from the City of Westfield Water Works storage reservoir dam last described, where the drainage area is two and one-half square miles, there was years ago a dam which furnished power for a sawmill owned by H. H. Higgins. Hardly a trace of this establishment now remains and no obstruction is offered to the natural flow of the brook.

STRONG DAM.

On Hollister Brook, which is a tributary of Tillotson Brook, at a point about one and one-quarter miles upstream from the City of Westfield Water Works dam No. 2, where the drainage area is one and a half square miles, are the remains of a sawmill dam formerly owned by one E. Strong. This dam was about one hundred feet in length and twelve feet in height. Since only traces of the structure remain no obstruction is offered to the natural flow of the brook.

DICKINSON DAM.

Dickinson Brook rises on the southeast slope of Bad Luck Mountain about one-half mile northwest of Granville Corners, flows southwesterly and northerly to Tillotson Brook, which it joins to form Munn Brook. It is about two and one-half miles in length and has a total drainage area of seven and one-half square miles.

Upstream about one mile from the mouth of the brook, and near the highway at Granville Corners, at a point where the drainage area contributory is six square miles, is a dam owned by Howard Dickinson, Granville, Mass.

This is a low dam of logs and concrete built across the brook to divert the water to the forebay of the sawmill and cidermill attached. It is about one hundred feet in length and only two and one-half or three feet in height. The pondage formed is very small and should the structure fail no material damage would result from the released water.

R. B. COOLEY DAM.

This dam is on a tributary which joins Dickinson Brook from the south about one-half mile downstream from Granville Corners. It belongs to R. B. Cooley, Granville, Mass., and is located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is about a square mile.

The dam is an earthen embankment one hundred and fifty feet in length, eight feet in height and carries a private roadway on its top which is eight or nine feet in width. In the center of the dam there is a spillway or overflow six feet in length over which the water falls into a culvert laid through the dam.

The dam is in good condition and should always be kept in such, as the pond formed is a large body of water covering probably one hundred acres. The dam was built about thirty-four years ago, and the pond is an artificial one, as there was no trace of a pond at this place previous to the construction of the dam.

NOBLE & COOLEY DRUM SHOP DAMS.

Seymour Brook rises on the southeast slope of Winchell Mountain, flows southeasterly and northeasterly to Dickinson Brook into which it empties at Granville Corners. It is two and one-quarter miles in length and has a total drainage area of three and one-half square miles.

There are three small dams on Seymour Brook in close proximity to each other, belonging to the Noble & Cooley Drum Shop, Granville, Mass. They are located at Granville Corners about fifteen hundred feet upstream from the mouth of the brook, at a point where the drainage area contributory is three and one-quarter square miles.

The first of these dams is a short distance downstream from the drum shop, and is an earthen embankment which carries the highway. It is one hundred and twenty feet in length and seven and one-half feet in height. Its spillway is built of concrete, twelve feet in length, and discharges into a concrete culvert under the highway bridge. The pond formed is small and is fed from the main stream by a pipe laid under the factory buildings.

The second dam is located above the drum shops. It is an earthen embankment two hundred and forty-five feet in length and seven feet in height. It has two spillways, one on the north end eight feet in length, and one on the south end six feet in length. The pond formed by this dam is used as a swimming pool and is fed by water diverted through a twelve inch galvanized pipe from the main stream. The spillways need some repairs which were explained on the ground to a representative of the Drum Shop.

The third or diversion dam is only a small structure one and one-half feet or thereabouts in height built across the main stream and forms no material pondage. All three structures are with the exceptions noted in fair condition.

ROBERTS DAM.

About one and one-half miles upstream from the Noble & Cooley Drum Shop dams, at a point where the drainage area contributory is about one-half a square mile, is located a sawmill dam belonging to Ralph Roberts, Granville, Mass.

The dam is built of earth and stone. Its length is one hundred and twenty-five feet and its height only four feet. It turned water into a canal that connected with the mill below, which went out of existence years ago.

The dam is not in very good condition but inasmuch as the pondage is practically nothing, there would be no material damage done by released water in case of failure of the structure. The condition of the dam was explained to the owner.

HODGE DAM.

Trumble Brook rises on the west slope of Bad Luck Mountain about three-quarters of a mile north of East Granville, flows southerly and easterly to Seymour Brook into which it empties about one-half mile upstream from the junction of Seymour and Dickinson Brooks. Trumble Brook is one and three-quarters miles in length and has a total drainage area of less than two square miles.

About a mile upstream from its mouth, where the drainage area contributory is one and one-quarter square miles, is located an old sawmill dam belonging now or formerly to Julia Hodge, Granville, Mass. This is an earthen structure one hundred and twenty-five feet in length and of considerable height, faced with heavy dry stonework on its downstream side. The center of the dam has gone out, making a free waterway for the brook so that no pondage is formed.

DEGANO DAM.

About one-half mile upstream from the Julia Hodge dam, last described, at a point where the drainage area is about one-third of a square mile, is located an ice pond dam belonging to John Degano, East Granville, Mass.

The dam is an earthen embankment one hundred feet in length and seven feet in height, faced upstream with concrete. It is a substantial structure, as it carries the highway on its top, or in other words, the highway is the dam through which a culvert three wide and five and a half feet deep, is laid from the stop plank spillway to discharge the waste water of the pond. The pond covers somewhat over an acre in area.

HARTFORD METROPOLITAN DISTRICT DAM NO. 1. (FORMERLY A. R. HOLCOMB DAM NO. 1.).

Valley Brook rises in the northern part of the town of Granville, one and one-half miles west of Sweetman Mountain, and three miles northwest of East Granville. It flows south through the town of Granville, across the Massachusetts-Connecticut boundary line and thence to the east branch of the Farmington River. It is six miles in length and has a total drainage area of eight and one-half square miles.

About one and one-half miles from its mouth or one-half mile upstream from the Massachusetts-Connecticut boundary line, at a point in the Brook where the drainage area contributory is six square miles, is located an old sawmill dam formerly belonging to A. R. Holcomb, Granby, Connecticut, but which it appears has been recently purchased by the Hartford Metropolitan Water District. The structure has been a derelict and has formed no pondage for years.

HARTFORD METROPOLITAN DISTRICT DAM NO. 2. (FORMERLY A. R. HOLCOMB DAM NO. 2.).

Upstream about fifteen hundred feet from the Holcomb dam No. 1, last mentioned, is located another sawmill dam which formerly belonged to A. R. Holcomb, Granby, Connecticut, but it appears that it has likewise been recently purchased by the Hartford Metropolitan Water District. This dam has also been a derelict and formed no pondage for some years.

STUART DAM.

About two and one-quarter miles upstream from the Holcomb dam, last described, in Twining Hollow, so-called, at a point where the drainage area contributory is two and one-half square miles, is located an old sawmill dam now or formerly belonging to George Stuart, Granville, Mass. The greater part of this structure has gone out, and therefore no pondage is formed.

THOMPSON DAM.

Hubbard River rises on the south slope of Barnes Mountain in Tolland, flows southeasterly through Granville to Pond Brook, both forming the east branch of the Farmington River. Hubbard River is six miles in length and has a total drainage area of fourteen and three-quarters square miles.

At a point a short distance below its junction with Pond Brook, where the drainage area contributory is twenty square miles, was a sawmill dam belonging to F. Thompson, Granville, Mass. The sawmill went out of existence long ago, and only a vestige of the dam remains.

GREEN DAM.

Two thousand feet farther upstream, at a point where the drainage area contributory is about fourteen and one-half square miles, was another old sawmill dam which was owned in the seventies by one H. Green. This structure has been a derelict for years and now not much more than a trace of it is left.

JOHNSON DAM.

Still farther upstream, a distance of one and one-half miles from the last dam mentioned, at a point where the drainage area is twelve square miles, was a turning and sawing factory dam owned and operated by J. M. Johnson some fifty years ago. The factory then was a busy establishment, though it or the dam does not exist at the present time, traces only of both being left. The mill privilege and land adjoining are now within the boundaries of the Granville State Forest.

FRISBEE DAM.

Pond Brook rises in Parsons Pond, which is situated about two miles north of West Granville, flows southwesterly and southerly to Hubbard River with which it joins to form, as has been stated above, the east branch of the Farmington River. Pond Brook is four and one-half miles in length and has a total drainage area of five and one-quarter square miles.

In West Granville, at a point on the brook where the drainage area contributory is one and one-half square miles, is located a dam belonging now or formerly to Nelson Frisbee, West Granville, Mass.

It is a dry stone masonry structure backed with earth, eighty-five feet in length and eight feet in height. It forms no pond, as part of the structure is gone out. To this dam there was formerly attached a tannery which was operated by Elisha Marks. The tannery went out of existence years ago.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY HOWARD DAM).

On Borden Brook (described under Blandford) a short distance above the southwest corner of the Borden Reservoir, at a point where the drainage area contributory is about four square miles, is part of an old sawmill dam which was purchased by the City of Springfield Water Works for the protection of its water shed. It is believed that some fifty years ago this dam and the mill attached belonged to one Howard. So little of the structure now remains that it need not be further considered.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY C. PHELON DAM).

On a tributary of Borden Brook from the south, at a point about one-half mile upstream from its mouth on practically the Blandford-Granville boundary line, where the drainage area is about one-half a square mile, is an old sawmill dam eighty feet in length and ten feet in height. It forms no pond as part of the structure has been taken down and a free waterway made for the stream. Years ago this structure was owned by Curtis Phelon, but it has evidently been purchased by the City of Springfield Water Works as it will be beneath the surface of the Cobble Mountain reservoir.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY STOW'S POND DAM).

A small tributary joins the Westfield Little River from the south, about one-half a mile downstream from the mouth of the Borden Brook. At a point three-quarters of a mile from the mouth of this tributary where the drainage area is one and three-quarters square miles, was located the Stow's Pond sawmill dam now belonging to the City of Springfield Water Works. The greater part of this structure has gone out and as the remainder will be beneath the surface of the Cobble Mountain reservoir, it need not be further considered.

NATURAL PONDS.

There are two natural ponds in Granville. One is Parsons Pond, which is the headwaters of Pond Brook and located about two miles north of West Granville. This pond has a surface area of about twelve acres and a drainage area of one-third of a square mile.

The other is Black Pond, which is the headwaters of Borden Brook and located about two and one-half miles northwest of West Granville. Black Pond has a surface area of twenty-eight acres and a drainage area of one-quarter of a square mile. No dam has been constructed across the outlets of either of these ponds.

H A M P D E N

There are fifteen dams in Hampden, six of which are located on Scantic Brook, seven on tributaries of Scantic Brook and two on a tributary of the South Branch of Mill River.

CARMODY DAM.

Scantic Brook rises in the northern part of the town of Stafford, Connecticut, flows northwesterly to Hampden Center, Massachusetts, thence westerly and southerly to North Somers, Connecticut, where it joins Watchaug Brook, both brooks forming the Scantic River, which is a tributary of the Connecticut River. The total drainage area of Scantic Brook is thirty-one and one-half square miles, and its length is eleven miles, of which eight are in the town of Hampden.

The first dam on Scantic Brook in Massachusetts is that one in the town of Hampden belonging now or formerly to Mrs. Anna Carmody, East Longmeadow, Mass. It is located about a mile upstream from the state line at a point where the drainage area contributory is twenty-four and one-half square miles.

This dam is not built across the main stream but across a diversion canal leading from the brook to the saw and grist mill attached, and forms a pond or forebay about one-half an acre in area.

The dam is an earthen embankment one hundred and five feet in length, twenty-two feet in height and is faced on the downstream side with a masonry wall. A four foot diameter steel penstock laid through the dam connects the pond with the wheels in the mill. The overflow is twelve feet in length and located over one hundred feet away from the dam. A channel excavated in the natural earth connects this overflow with the main brook downstream. A new concrete overflow was built during the past year and this part of the structure is now in good condition.

The dam was first used to furnish power to a saw and grist mill owned by Kibbie and Tuttle who evidently built the works over sixty years ago. The grist mill part of the establishment went out of existence some years ago, and now, after operating only intermittently for some years, it seems that the sawmill is also shut down for good and the industry abandoned.

KENWORTHY DAM.

About a mile upstream from the Carmody dam, last described, and one-third of a mile east of Scantic, at a point where the drainage area contributory is about twenty-three and one-half square miles, is part of a dam belonging now or formerly to John Kenworthy, Hampden, Mass. This dam forms no pondage and offers no obstruction to the natural flow of the stream.

To the dam was attached a woolen mill known as the Scantic Woolen Factory which went out of existence about thirty years ago.

KIMBALL DAM.

This structure is about one-third of a mile upstream from the dam last described, and located practically within Hampden Center, at a point on the stream where the drainage area contributory is about twenty-three and one-quarter square miles. It belongs, or formerly belonged, to H. Earl Kimball, 142 Angel Street,

Providence, Rhode Island. The dam was built for the purpose of developing power for a woolen mill which was in operation until about 1905, when the mill was burned down and not rebuilt. At one time the plant was known as the Ravine Manufacturing Company.

The dam is curved upstream in plan, and is a spillway masonry structure backed with gravel. Its length is one hundred and eighty feet and its height eighteen feet. A canal was laid from its west end to the woolen mill below.

The dam backs up water for a considerable distance, but the pond is narrow and does not cover more than a few acres. The dam is in fair condition. There is, however, some leakage around the waste gate etc., located next to the north abutment, that needs repairing.

MCCRAY DAM.

Upstream about one-half a mile from the H. Earl Kimball dam, last described, and in Hampden Center where the drainage area of the brook is about twenty-three square miles, is a dam belonging now or formerly to Lincoln McCray, Hampden, Mass.

To this dam was attached a woolen mill which was destroyed by fire about forty years ago and was not rebuilt. The plant was then known as the Lacowsic Woolen Company Mill. The dam was a wooden spillway structure eight feet in height and one hundred and twenty-five feet in length between masonry abutments. It is breached in the center and has a free waterway through it so that on pondage is formed.

STALKER DAM (FORMERLY MCCRAY DAM NO. 2).

About one-half mile upstream from the McCray dam, last described, at a point where the drainage area contributory is twenty and three-quarters square miles, is a dam belonging to Mrs. E. E. Stalker, Hampden, Mass. It is a stone spillway structure backed with gravel. The length of the dam between abutments, which is also the spillway section, is seventy-six feet and its height is eight feet.

The pond formed by the dam is small and practically filled with silt, so that in case of failure of the structure no material damage would be done by released water. The dam is in fair condition although there are a few loose stones in the structure that require re-setting.

ROCKWELL DAM.

About two miles upstream at a point where the drainage area is seven and one-half square miles, is a dam belonging to Mrs. S. K. Rockwell, Hampden, Mass., or Belrose Lane, Radnor, Pa.

It is a masonry spillway structure with the downstream face dry masonry and the upstream face plastered and reinforced with concrete. The structure is sixteen feet in height and one hundred and thirty-four feet in length, of which one hundred and fourteen feet is the spillway section. The dam is rather light in section with its top only two and one-half feet wide. The bulkhead at the west end is twenty feet in length and contains a gate for drawing down and emptying the pond.

This dam was an old structure overhauled and increased in height. The pond formed by the dam covers about two acres and is used as a pleasure pond. Formerly there was a gristmill and a sawmill attached to the dam known as Burts Mills. The dam is in fair condition at present.

DRISCOLL DAM.

Two of the seven dams that are on tributaries of Scantic Brook are on a tributary that rises in the southwest part of Hampden and flows west and south to Scantic Brook into which it empties at a point in Connecticut just below the Massachusetts-Connecticut state line. This tributary is about one and one-half miles in length and has a total drainage area of about one square mile.

On ascending this brook from the Massachusetts-Connecticut state line, the first dam to be met is located on the edge of the highway leading from Scantic to North Somers, at a point about a mile south of Scantic, where the drainage area contributory is a little less than one-half a square mile. It belongs to Mrs. Margaret Driscoll, Ludlow, Mass. R.F.D. No. 2.

This dam, which lies close to the easterly side of the highway, is an earthen embankment ninety feet in length, six and one-half feet in height, and eight feet in width on top. The structure forms an ice pond of about one acre. It has an ample spillway. The dam is in fair condition except at its east end where some minor repairs are needed.

WINTHROP KIBBE DAM.

This dam is located about one thousand feet upstream from the Driscoll dam last described, at a point where the drainage area is only about one-quarter of a square mile and belongs to Winthrop Kibbe, Somers, Connecticut. It is an earthen embankment one hundred and sixty-eight feet in length, six feet in height, and six and one-half feet in width on top. The dam is in fair condition and forms an ice and fishing pond about four acres in area.

SMITH DAM.

Two more of the seven dams that are on tributaries of Scantic Brook are on a tributary which rises on the west slope of Pine Mountain and flows directly north to Scantic Brook into which it empties at Hampden Center. This tributary is about one and one-half miles in length and has a total drainage area of about one square mile.

The first dam on this tributary above its mouth belongs to R. S. Smith, Hampden, Mass. The structure abutts the west side of the South Road, so-called, at a point about a mile south of Hampden Center where the drainage area contributory is about one-half a square mile. The dam is a reinforced concrete wall six or eight inches in thickness backed with earth.

It is fifty-five feet in length and six feet in height. The small pond formed is practically filled with silt, hence little damage would result even if the structure failed completely.

N. S. KIBBE DAM.

About one third of a mile upstream from the Smith dam last described, and on the west side of the South Road, so-called, at a point where the drainage area contributory is about one-quarter of a square mile, was a small ice pond dam now or formerly belonging to N. S. Kibbe, Hampden, Mass.

This structure is now a derelict with a freewaterway through it and therefore no further description of it is necessary.

GOODWILL DAM.

The fifth of the seven dams on tributaries of Scantic Brook is on East Brook which rises in the southeast corner of Wilbraham and flows southerly through Hampden to Scantic Brook into which it empties about one-third of a mile east of Hampden Center.

East Brook is about three and one-half miles long and has a total drainage area of three square miles. About three-quarters of a mile from the mouth of the brook at a point where the drainage area contributory is two and three-quarters square miles is a dam belonging now, it is believed, to Harry Goodwill, and formerly to the heirs of Simon S. Hunt.

The dam is an earthen embankment faced up and down stream with dry stone masonry, one hundred and seventy feet in length, eleven feet in height and twenty feet in width on top. The spillway is adequate and located outside the west end of the dam. The pond formed covers about two and one-half acres and years ago furnished power to a sawmill operated by Hunt and Beebe. The mill was shut down about forty years ago and the pond at present is used for fishing purposes. There is some leakage through the structure that should be repaired if the pond is to be maintained.

GAYLORD DAM.

The sixth of the dams on tributaries of Scantic Brook is on a tributary of Big Brook which in turn is a tributary of Scantic Brook. This tributary of Big Brook rises on the north slope of Mount Vision, and flows southeasterly to Big Brook into which it empties about one and one-half miles above the confluence of Big and Scantic Brooks. It is only about one-half a mile long and has a total drainage area of about one-quarter of a square mile. The dam is located near the headwaters, at a point where the drainage area is not over one-tenth of a square mile, and belongs to Emerson Gaylord, Chicopee, Mass.

It is an earthen structure with a concrete facing, one hundred and ten feet in length and nine feet in height. An adequate concrete spillway is built in the center of the dam. The pond formed covers about one-quarter of an acre and is used as a pleasure and ice pond. The structure is in good condition.

FULLER DAM.

The last of the seven dams on tributaries of Scantic Brook is on West Brook. This brook rises on the west slope of Mount Vision and flows southerly to Scantic Brook into which it empties at Hampden Center. It is about one and three-quarters miles in length and has a total drainage area of a little less than one square mile. The dam is located about a mile upstream from its mouth or a mile north of Hampden Center, at a point where the drainage area contributory is a little less than one-half of a square mile, and belongs to F. W. Fuller, Springfield, Mass.

It is an earthen embankment one hundred and ten feet in length and eight feet in height, faced upstream with a concrete wall about one foot in thickness. The structure is in good condition and the pond formed thereby, which is not over one-quarter of an acre in area, is used as a pleasure pond.

KELLOG FARMS INC. DAMS.

These two dams are on a tributary of the South Branch of Mill River. This tributary rises on the west slope of the Wilbraham Mountain about a mile north of Hampden Center and flows westerly and northerly to the South Branch of Mill River, into which it empties at a point in Wilbraham about a mile upstream from where the South Branch intersects the East Longmeadow-Wilbraham boundary line.

Its length is two miles and its total drainage area is one and one-quarter square miles. The two dams belong to the Kellog Farms Inc., Springfield, Mass. The two structures are located in close proximity to each other about one and one-half miles north of Scantic, and about fifteen hundred feet east of the highway leading from Scantic to Wilbraham. The drainage area contributory to these dams is less than one-quarter of a square mile.

The lower of the two is a concrete structure one hundred and forty feet in length and eighteen feet in height. It is in good condition and forms a small reservoir not over one-eighth of an acre in area which is used as a water supply for the farm. The other dam, which is three hundred feet upstream, is a masonry structure sixty-four feet in length and about nine feet in height. It forms a very small reservoir and is in good condition.

H O L L A N D

There are eight dams and two natural ponds in the town of Holland. Of the dams two are on Holland Brook, a tributary of Quinebaug River, two on a tributary of Holland Brook, three on Stevens Brook, and one on a tributary of Stevens Brook.

ALEXANDER DAM.

Holland Brook rises in the town of Union, Connecticut, flows northwest into Holland and then north through Holland into Brimfield, where it joins Mill Brook to form the Quinebaug River. Holland Brook is about eight miles in length and has a total drainage area of about twenty-six square miles.

Upstream about one and one-half miles from its mouth, or one-half mile above Holland Pond, so-called, at a point where the drainage area contributory is twenty-three and one-half square miles, was located a dam on property now or formerly belonging to E. Warren Alexander, Worcester, Mass.

To this structure, which was an earthen embankment faced with dry stone masonry, were attached a sawmill and a gristmill. Both mills have been abandoned for forty years and only traces of their foundations remain. Likewise, only traces of the dam remain, and therefore, the structure can be dismissed without any further description.

HAMILTON WOOLEN COMPANY DAM.

About one-half a mile upstream from the E. Warren Alexander dam and one-half mile northeast of Holland Center, at a point about seventy feet south of the highway, where the drainage area contributory is twenty-one and three-quarters square miles, is located a dam belonging to the Hamilton Woolen Company, Southbridge, Mass.

It is a dry stone masonry structure of heavy section backed with earth, one hundred and seventy-six feet in length and sixteen feet in height, laid on a ledge foundation. The spillway is fifty-three feet in length with its crest three feet below the top of the dam.

The dam forms a storage reservoir for the Hamilton Woolen Mills, located downstream and has a sluice way through its center in which are installed gates for regulating the height of the reservoir. The dam, as far as could be learned, was built in the sixties.

It is still in good condition and always kept in repair. This is as it should be, considering the large body of water behind it, known as the Hamilton reservoir, which covers about four hundred and forty-five acres.

WELLS DAM.

On a tributary of Holland Brook into which it empties from the west, at the south end of the Hamilton reservoir, is a dam belonging to Cora Wells, Holland, Mass. This structure is located about fifteen hundred feet from the mouth of the tributary, at a point where the drainage area contributory is five and three-quarters square miles.

It is a gravity dry stone masonry structure to which a sawmill was attached. Only traces, however, of the foundation of the mill remain. The dam is a derelict and has an opening through it for the free flow of the brook.

RORABAUGH DAM.

This dam is located on a small tributary which joins the brook on which the Wells dam is built about three-quarters of a mile above that dam. It is about one mile west of the south end of the Hamilton reservoir and within one-quarter of a mile from the Connecticut line. It was built in 1930 by the present owner, James E. Rorabaugh, 674 Buchannon Place, West New York, New Jersey, to form a small pleasure and ice pond.

The dam is an embankment composed of earth and dry stone, faced and capped with concrete. It is seventy feet in length, and seven or eight feet in height above the streambed. A concrete spillway ten inches deep and about four feet wide is located in the top of the dam near the center. On this spillway is fashioned a fish screen which tends to collect leaves and raise the height of the pond. Evidently damage has already been done by this arrangement for it seems that the dam was topped and a trench washed through the embankment. This damage should be repaired, and the screens relocated so as not to interfere with the discharge of the spillway.

The drainage area contributory to the dam is less than one-half a square mile and the capacity of the pond formed less than one million of gallons.

HOWLETT DAM.

Stevens Brook rises just across the Massachusetts-Connecticut boundary line in the northeast corner of the town of Stafford, Connecticut, flows northeast into and across the corner of the town of Wales, and through the town of Holland to Holland Brook into which it empties about one-half of a mile upstream from the Hamilton Woolen Company dam. Stevens Brook is four miles in length and has a total drainage area of about four and one-half square miles.

On this brook about two thousand feet upstream from its mouth, at a point in the brook where the drainage area contributory is four and one-third square miles, was located a dam on property now or formerly belonging to Oliver Howlett, Holland, Mass. At one time there was a fulling mill attached but inasmuch as there are only traces of the dam left no further description is necessary.

CUMMINGS DAM NO. 1. (FORMERLY DWIGHT BUTTERWORTH DAM NO. 1.).

About a mile upstream from the Howlett dam, last described, at a point in the brook where the drainage area contributory is three square miles, are the remains of a dam belonging to W. F. Cummings, Holland, Mass. An establishment for making lamp-wicks was formerly connected with this dam, but this industry discontinued operations over seventy-five years ago and the dam and mill were abandoned. At the present time there is nothing left of the mill, and the little remaining portion of the dam offers no obstruction to the natural flow of the brook.

CUMMINGS DAM NO. 2. (FORMERLY DWIGHT BUTTERWORTH DAM NO. 2.).

Three hundred feet or thereabouts upstream is another dam owned by W. F. Cummings. This is an earthen embankment faced downstream with stone work, one hundred and ten feet in length and twelve feet in height. The sawmill attached was closed down for good in 1914, and the dam is now a derelict with an open passageway through it for the natural flow of the stream.

WING DAM.

This dam belonging to G. H. Wing, Holland, Mass., is located on a very small tributary which joins Stevens Brook from the north near the Holland-Wales boundary line. The dam is about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is only about one-tenth of a square mile.

The structure is an earthen embankment faced downstream with dry stone masonry, one hundred and fifty feet in length and five feet in height. The spillway or overflow is a swale across the top of the embankment located about thirty-five feet from the east end of the structure. The embankment is nine feet wide on its top and is of heavy section. The dam is in fair condition. The stone work, however, built across the upstream end of the swale, for the purpose of raising the pond, should be removed and the swale paved with stone.

NATURAL PONDS.

There are two natural ponds in Holland. One is the Holland Pond, which is situated about one mile north of Holland Center on Holland Brook. It is a large body of water which covers sixty-eight acres and has a drainage area contributory of twenty-five square miles.

The other is Lost Pond, situated about two miles southwest of Holland Center. This is a small natural body of water not over a couple of acres in area and with a drainage area contributory of only one-tenth of a square mile. There are no dams across the outlets of these two ponds.

H O L Y O K E

In Holyoke there are fourteen dams. Of these one is on the Connecticut River and belongs to the Holyoke Water Power Company. Six are on Black, Tannery and Whiting Street Brooks and are the municipal storage and intake dams of the City of Holyoke Water Works. Two are on Tannery Brook downstream from the municipal dam on that brook, two on City Farm Brook, one on a tributary of City Farm Brook, and two on Trout Brook.

HOLYOKE WATER POWER COMPANY DAM.

The Connecticut River rises in the Connecticut Lakes in northern New Hampshire and flows southerly between New Hampshire and Vermont across Massachusetts and Connecticut into Long Island Sound. It is three hundred and forty-five miles in length and has a total drainage area of eleven thousand three hundred and forty-five square miles, one hundred and five of which are in Canada.

In Massachusetts the river forms a part of the boundary line between Hampden and Hampshire Counties, being the boundary line between the City of Holyoke in the one and the town of South Hadley in the other. At the top of the rapids between Holyoke and the village of South Hadley Falls, where the drainage area contributory is eight thousand one hundred and eighty square miles, is located the Holyoke dam, so-called, built and owned by the Holyoke Water Power Company.

This dam is a gravity stone masonry spillway structure of the Ogee type one thousand and twenty feet in length between abutments and thirty feet in height. It is built on a ledge foundation and on top of this ledge along its toe is laid a horizontal rubble masonry apron covered with concrete to protect the toe from being undermined by erosion.

The fall developed by the dam and rapids is about sixty feet. To the dam is attached a system of canals, along the banks of which are located the industrial establishments of the City of Holyoke which are served by the power developed by the dam and canals, the wheel installation being in the neighborhood of fifty-five thousand horse-power.

The construction of the dam was started in 1892 and finished in 1896. With flashboards two and one-half feet in height on the dam, the pond formed backs up water above Northampton to the town of Hatfield and covers about two thousand two hundred and fifty acres. Without flashboards, the pond formed, when level with the crest of the dam, covers about fifteen hundred acres. The dam is in good condition and is under the constant supervision of the engineering department of the Holyoke Water Power Company.

CITY OF HOLYOKE WATER WORKS DAMS.

The City of Holyoke has erected and maintains six dams within the limits of the City of Holyoke.

ASHLEY RESERVOIR DAM.

This dam is located across the outlet of Ashley Reservoir in which Black Brook, or as it is sometimes called, Bear Hole Brook, rises. It is an earthen embankment two hundred and fifty feet in length and nine feet in height.

It has two spillways of adequate capacity by which the waste water discharges into Black Brook and flows southerly into West Springfield to the Westfield River.

Ashley Reservoir is a natural pond which was raised by the dam thrown across its outlet. It is located in the southwestern part of the city near the West Springfield town line, and was taken as a water supply in 1872. The surface area of the reservoir is two hundred and eighty-six acres, its drainage area three square miles, and its capacity about fifteen hundred millions of gallons.

BRAY RESERVOIR DAM.

The Bray Reservoir dam built in 1880 on the Bray Brook, a tributary of Ashley Reservoir, is an earthen structure one hundred and sixty-five feet in length, twenty-five feet in height, and twelve feet wide on its top. It is located about two hundred feet from the western bank of the Ashley Reservoir, has a drainage area of eight-tenths of a square mile, a surface area of fifteen acres, and a capacity of sixty millions of gallons.

HIGH SERVICE RESERVOIR DAM.

The High Service Reservoir dam was completed in 1904 and is built on another tributary, emptying into Ashley Reservoir toward its west end. The dam is located about one thousand feet upstream from the mouth of the tributary where the elevation of the ground is one hundred and eight feet higher than Ashley Reservoir, at a point where the drainage area is about one-half a square mile.

The dam is an earthen embankment seven hundred and thirty-five feet in length, thirty-three feet in height, and twenty-five feet wide on its top. Besides the dam proper, there extends from its west end an earthen dyke nine hundred feet in length and fourteen feet in height. The spillway of the dam is ten feet in length and discharges the waste water over solid ledge into a channel connected with the old bed of the brook below the toe of the structure. The surface area of the reservoir is sixty-one acres, and its capacity is three hundred and fifty-four millions of gallons.

TANNERY BROOK RESERVOIR DAM.

Tannery Brook, which lies in close proximity to Ashley Reservoir but is not a tributary thereof, rises in the City of Holyoke on the east slope of Sheldon Hill, flows southeasterly to a point near the Holyoke-West Springfield boundary line, thence in Holyoke along that boundary line to the Connecticut River. It is three and one-quarter miles in length and has a total drainage area of two and one-half square miles.

At the point where the highway leading from the City of Holyoke to the City of Westfield crosses the brook, where the drainage area is a little over one-half a square mile, is located the Tannery Reservoir dam. It is one hundred and fifty feet in length, about nine feet in height, and forms the highway embankment in which the spillway is located. The spillway is built on the upstream side of the highway and connects with a pipe or culvert laid through the highway. The surface area of the reservoir is about six acres and its capacity two millions of gallons.

WHITING STREET INTAKE RESERVOIR DAM.

There are two dams located in close proximity to each other on Whiting Street Brook in the northerly part of the City of Holyoke, at the foot of Mount Tom. Whiting Street Brook rises on the easterly slope of Mount Tom and flows southeasterly emptying into the Connecticut River at a point two miles upstream from the Holyoke dam, described above, and two miles downstream from Smith Ferry, so-called. It is about two miles in length and has a total drainage area of about two square miles.

About one-half mile upstream from its mouth, where the drainage area is a little over one and one-half square miles, is located the Whiting Street Lower Reservoir dam, built in 1884. It is a stone masonry structure one hundred and forty-one feet in length and fifteen feet in height. Its spillway is twelve feet in length and the area of the reservoir formed is only an acre. This reservoir is known as the Whiting Street Intake, from which the water is taken in a pipe to the distribution system.

WHITING STREET STORAGE RESERVOIR DAM.

About six hundred feet upstream from the Intake Reservoir, last described, is a second dam, which forms the Whiting Street Storage Reservoir. This dam as built in 1888-89 was a rough sandstone structure of heavy section, twenty-two feet in height and seventeen hundred and seventy-three feet in length. The dam having been subject every year to ice thrust, it was necessary to keep an open channel along the upstream face. To increase the factor of safety against this ice thrust the dam was backed on the downstream side with a heavy earthen embankment. This work was done in 1929 and added greatly to the stability of the structure. The overflow is about sixteen feet in length and located near the south end of the dam. It is provided with a concrete crest one and one-half feet below the top of the dam.

The reservoir formed has a surface area of approximately one hundred and twenty acres, a capacity of about five hundred millions of gallons, and a drainage area contributory of about one and one-half square miles.

All these dams described under City of Holyoke Water Works Dams are in good condition and under the constant supervision of the officers of the Holyoke Water Department.

COTE DAM.

On Tannery Brook (described with the City of Holyoke Water Works dams in connection with Tannery Reservoir), at a point about a mile upstream from its mouth where the drainage area contributory is one and one-third square miles, is a dam belonging to Louis Cote Jr.

It is an earthen embankment two hundred and forty feet in length, twelve feet in height, and eight feet in width on top. The spillway or overflow is one hundred feet from its north end and is built of concrete. It is seven feet in length with its crest four and one-half feet below the top of the embankment. There are flashboards one and one-half feet in height on the crest of the spillway. The pond formed by the dam is two and one-half acres in area and is used as an ice pond. The dam is in fair condition.

EGER DAM.

Upstream about fifteen hundred feet from the Cote dam, last described, in close proximity to the New York, New Haven & Hartford railroad right of way, at a point where the drainage area contributory is one and one-quarter square miles, is a dam belonging to Herman Eger of Lower Westfield Road, Holyoke, Mass.

It is an earthen embankment one hundred and ten feet in length and five feet in height. The overflow is a concrete wall about ten feet in length. The pond formed covers about one-third of an acre, and is a shallow body of water used as an ice pond. The dam needs some repairs which were pointed out to the owner. In case of its failure, however, because of the small capacity of the pond, no material damage would be done by the released water.

CARPENTIER DAM.

City Farm Brook is a tributary of Tannery Brook, rises in the same locality as the latter, flows nearly parallel and empties into Tannery Brook near the New York, New Haven & Hartford railroad right of way in the southern part of the city. City Farm Brook is about two miles in length and has a total drainage area of a little less than a square mile.

About two thousand feet upstream from the mouth of this brook, and on the north side of Lower Westfield Road, at a point where the drainage area is three-quarters of a square mile, is a dam belonging to V. Carpentier, Lower Westfield Road, Holyoke, R. F. D. 1. It is an earthen embankment three hundred and fifty feet in length and seven feet in height, with its downstream face perpendicular and kept in place by railroad ties.

The overflow is located one hundred feet south from the north end of the structure. It is a concrete wall one foot in thickness built in the upstream slope of the structure, from which an overflow channel extends below the toe of the dam.

The pond formed covers about two acres and is used as an ice pond. The dam is in fair condition.

FRANK BRAY DAM.

The second and last dam on City Farm Brook is located on the north-westerly side of the Westfield Road, so-called, about fifteen hundred feet southerly from Hitchcock Street, at a point where the drainage area contributory is somewhat less than a quarter of a square mile, and belongs to Frank G. Bray, Westfield Road, Holyoke, Mass.

It is an earthen embankment built along the highway, two hundred and fifty-five feet in length and six feet in height. There are two spillways in the structure. Both of these are swales that discharge into separate wells built on the downstream side of the embankment.

From each well is laid a pipe which conducts the waste water under the highway. The pond is very small and used as an ice pond. The top of the dam is about four feet higher than the highway. The structure is in fair condition although there are some minor repairs needed thereon which were pointed out to the owner when the structure was inspected.

DWIGHT BRAY DAM.

This structure is located near the southeasterly side of the Westfield Road about fifteen hundred feet southerly from Hitchcock Street on a tributary of Tannery Brook, at a point where the drainage area contributory is only one-tenth of a square mile and belongs to Dwight R. Bray, Westfield Road, Holyoke, Massachusetts.

It is an earthen embankment two hundred and forty-four feet in length and six feet in height. The overflow is located at its south end. The structure formed a pond of about an acre in area. For some years, however, the pond has not been used for cutting of ice and the dam has been breached to make a free waterway through it.

KENNEDY DAM.

Trout Brook rises in Holyoke about one-half mile north of Whiting Street Reservoir and flows northeast a distance of about two miles to the Connecticut River into which it empties about a mile upstream from Smith Ferry. Its total drainage area is two square miles.

About two thousand feet from its mouth, at a point where the drainage area contributory is a little more than one and three-quarters square miles, is a dam belonging to P. J. Kennedy of Holyoke, Mass. It is a dry masonry structure backed upstream with earth, one hundred and ten feet in length and twenty feet in height.

The overflow is at the north end and is twenty-five feet in length with its crest two feet below the top of the dam. The structure is built on rock ledge which is the top of a cascade. Through the dam an opening has been made ten feet or thereabouts in width, and to a depth of about seven feet below the crest, making practically a free passage for the water.

STATE RESERVATION DAM (BRAY LAKE DAM).

About one-half mile upstream from the Kennedy dam, last described, and three-quarters of a mile northwest of Smith Ferry, at a point where the drainage area contributory is one and one-half square miles, is a dam on the State Reservation which forms Bray Lake.

This structure is an earthen embankment four hundred and sixty feet in length and nine feet in height. Its top is eighteen feet in width and used as a roadway. The overflow, which is located one hundred and thirty-two feet from the north end of the dam, is twelve feet in length, with its crest five feet below the top of the embankment.

The structure is in good condition except the end of the east wall of the overflow channel which seems to be overturning and needs some repairs.

L O N G M E A D O W

There are four dams in Longmeadow, one on Wheel Meadow Brook, one on Longmeadow Brook, and two on tributaries of Longmeadow Brook.

HANDY DAM.

Wheel Meadow Brook rises about one-half a mile east of Longmeadow Street in Longmeadow Center and flows westerly to the Connecticut River into which it empties about a mile downstream from the Longmeadow-Springfield boundary line. It is one and one-half miles in length and has a total drainage area of three-quarters of a square mile.

About one mile from its mouth, and five hundred feet east of Longmeadow Street, at a point where the drainage area contributory is one-half a square mile is a dam owned now or formerly by H. L. Handy, Longmeadow, Mass.

It is an earthen embankment one hundred feet in length, thirteen feet in height, and ten feet in width on top. The spillway is a brick well to which is connected a two foot diameter brick culvert laid through the dam. The pond formed covers about one and one-half acres.

It appears that this dam and pond have been either bought or leased by the United States Department of Commerce and are now used as a co-operative fish nursery. Around the entrance of the spillway well there has been placed wire screening which affects the discharging capacity of the spillway. If this screening is to be a permanent affair, there should be provided an additional separate surface overflow to insure against topping of the structure in flood flows.

LONGMEADOW COUNTRY CLUB DAM (CLUB REALTY CO. DAM).

Longmeadow Brook rises near the Longmeadow-East Longmeadow boundary line and flows west to the Connecticut River, into which it empties about a mile upstream from the Massachusetts-Connecticut boundary line. It is four miles in length and has a total drainage area of four square miles.

About two miles upstream from its mouth and a mile southeast of Longmeadow Center, at a point where the drainage area contributory is three square miles, more or less, is located a dam belonging to the Club Realty Company, Springfield, Mass.

It is an earthen embankment one hundred and sixty feet in length, nineteen feet in height and ten feet in width on top. The overflow or spillway is located at the north end of the dam, and is ten feet in length with its crest five feet below the top of the dam. It discharges into a channel connected with the bed of the brook at a point downstream from the toe of the structure. The spillway and upper stretch of the channel are built of concrete. The dam proper is in fair condition but the spillway channel requires some repairs, to which the attention of the Club has been drawn.

KRIENER DAM.

About a mile and three-quarters upstream from the Longmeadow Country Club Dam, last described, on a small tributary of the north branch of Longmeadow Brook at a point where the drainage area is only about one-quarter of a square mile is a dam belonging to Eugene Kriener, William Street, Longmeadow, Mass.

The dam is an earthen embankment fifty feet in length, ten feet in height, and fourteen feet in width on top. Its upstream face is paved with field stone. The overflow is an eighteen inch pipe laid through the foundation of the structure from a stop plank well located at the upstream toe. The dam is in good condition and forms a pond of nine acres which is used as a fishing and pleasure pond. The grounds around the pond are known as Turners Park.

LONGMEADOW COUNTRY DAY SCHOOL DAM.

This dam was a small earthen structure of no importance located on the small brook which rises about one-quarter of a mile east of Longmeadow Center and flows southerly to Longmeadow Brook. The dam was built about four years ago but is now a derelict with a free passage through it for the stream.

L U D L O W

There are nine dams and seven natural ponds in Ludlow. Of the dams one is on the Chicopee River, namely that belonging to the Ludlow Manufacturing Associates, described under Chicopee River Dams, two are on Higher Brook, two on tributaries of Higher Brook, two on Broad Brook, one on a tributary of Broad Brook, and one on Stony Brook.

BURELLE DAM.

Higher Brook rises on the south slope of Facing Hills, flows southerly and westerly to the Chicopee River into which it empties about a mile downstream from the Ludlow-Chicopee boundary line. It is nine miles in length and has a total drainage area of eleven and one-third square miles.

About two miles upstream from its mouth, in the southwest corner of Ludlow, at a point where the drainage area contributory is ten and one-quarter square miles, are located the remains of an old dam belonging to M. Burelle, Ludlow, Mass. This structure was an earthen embankment faced downstream with dry stone masonry, one hundred feet in length and about ten feet in height, and having the spillway in the center. The small portion of the dam which now remains forms no pond and offers no obstruction to the free passage of the brook. To this dam and pond, which covered about six acres, were attached a gristmill and a batting mill, both being in operation in the seventies.

BLOCK DAM.

About a mile upstream from the Burelle dam, last described, at a point where the drainage area contributory is eight and one-third square miles, is located a dam belonging to Samuel Block, 58 Bancroft Street, Springfield, Mass.

This structure is an earthen embankment one hundred and fifty-six feet in length, ten feet in height, and thirty feet in width on top. It is faced upstream in part with a concrete wall one foot in thickness, and downstream with dry stone work. The spillway is twenty-four feet in length and is located within fifteen feet of the west end of the structure with its crest about one and one-half feet below the top of the dam. The dam is in poor condition and in need of considerable repairs which were drawn to the attention of the owner.

The pond formed by the dam is about ten acres in area. To the structure was attached a sawmill and sash and blind factory, known as the Harris Mills. The mill buildings were burned down in 1924 and since then the pond has been used as an ice and pleasure pond.

CLARK DAM.

On a tributary of Higher Brook into which it empties from the east about one hundred feet downstream from Ludlow Center, is located a dam belonging to Alva L. Clark, Ludlow, Mass., and which formerly belonged to Warren D. Fuller. It is an earthen embankment eighty-five feet in length and twelve feet in height, faced downstream with dry stone masonry. Its drainage area is one-half a square mile.

The pond formed by the structure is about one and one-half acres in area, and is a shallow body of water. To the structure was attached a sawmill which was in operation until about ten years ago. The dam is still in fair condition and the pond is being used as an ice pond.

SMITH DAM.

In Ludlow Center, on a small tributary of Higher Brook at a point where the drainage area contributory is not over one-tenth of a square mile, is a small ice pond dam belonging to Roy L. Smith, Ludlow Center, Mass.

This dam is an earthen embankment fifty feet in length, three and one-half feet in height, and six feet in width on top. The spillway is in the form of a wooden sluice at or near the center of the dam. The area of the pond formed is less than one-quarter of an acre and the pondage immaterial. While inspection of this dam is not required, it is noted here as a matter of record.

ALDEN BROTHERS DAM.

Broad Brook rises one and one-half miles south of Belchertown Center, flows southerly through Belchertown to Ludlow and through Ludlow to the Chicopee River, into which it empties about fifteen hundred feet west of the Belchertown-Ludlow boundary line. It is six miles in length and has a total drainage area of eleven and one-half square miles.

About a mile from its mouth and two and one-half miles east of Ludlow Center, at a point where the drainage area contributory is ten and three-quarters square miles, is a dam belonging now or formerly to the Alden Brothers, Ludlow, Mass. This is an earthen embankment faced downstream with dry stone masonry, one hundred and sixty feet in length, and eleven feet in height.

The spillway is forty-eight feet in length and is located at the west end. It is built of dry stone masonry and covered with a wood plank flooring. On this flooring is built a planked timber framework one foot in height with its crest two feet below the top of the embankment. If this crest is to remain as the permanent overflow, which its design suggests, it is advisable that the top of the embankment be raised at least one foot for its entire length.

The pond is eight acres in area and a sawmill and cidermill were formerly located here. The dam was built in 1864, and has remained in the hands of the same family ever since.

KOWALZIK DAM.

Upstream about one and one-quarter miles from the Alden Brothers dam, last described, at a point in the brook where the drainage area contributory is five and three-quarters square miles, is a dam belonging to Anthony Kowalzik, Alden Street, Ludlow, Mass.

This dam has a total length of eighty-five feet, and is composed of a dry stone masonry spillway section fourteen feet in length between two earthen embankments. The center of the structure or spillway section is backed with earth and is seven and one-half feet in height above the stream bed over which it is located.

Some repairs have been made on the structure within the last two years but for greater safety it is advisable either to raise the earth embankments a couple of feet higher, or provide a swale over the natural ground at the end of

the earth embankment. The latter work, which was explained to the owner, can be readily done at little expense.

To this dam was attached a horse radish factory which ceased operating about ten years ago. Since that time the factory has not been put to any use. The pond formed is about four acres in area and is a shallow body of water used as an ice pond.

CITY OF SPRINGFIELD WATER WORKS DAM (LUDLOW RES. DAM).

Ludlow Reservoir is located in the northeast corner of the town of Ludlow about one-half mile upstream on the main tributary of Broad Brook. The reservoir has a surface area of four hundred and forty-eight acres, and a total drainage area contributory, including Jabish Brook, of twenty-one square miles.

The dam which forms the reservoir is an earthen embankment thirteen hundred feet, more or less, in length, and forty feet in height, with its overflow at the south end. The dam and overflow are in good condition and under the constant inspection of the engineering department of the Springfield Water Works.

CARVER DAM.

Stony Brook rises on the west slope of Bagg Hill in the town of Granby, flows two miles southwest into Ludlow, thence northwest through Granby and South Hadley to the Connecticut River into which it empties one and one-half miles west of South Hadley Center. It is about ten miles in length and has a total drainage area of twenty-one square miles.

In Ludlow City, at a point where the drainage area contributory is five and one-third square miles, is a dam belonging to Elmer H. Carver, West Street, Ludlow, Mass. It is an earthen embankment one hundred feet or thereabouts in length, having a concrete spillway in the center forty-three and one-half feet in length.

The height to the spillway is six and one-half feet, and to the top of the embankment about eight feet. The structure is in fair condition except the downstream wing wall of the west abutment which requires some repairing. The condition of this wall was drawn to the attention of the owner at the time of the inspection.

NATURAL PONDS.

The seven natural ponds in the town of Ludlow are Second Pond, Lyons Pond, Chapins Pond, Wood Pond, Pickerel Pond, Shaws Pond, and Minechoag Pond.

SECOND POND.

Second Pond is located one and one-quarter miles southeast of Ludlow City on the headwaters of a tributary of Stony Brook. It has a surface area of thirteen acres and a drainage area of not more than one-quarter of a square mile.

LYONS POND.

Lyons Pond is located one and one-half miles northwest of Ludlow Center on the headwaters of a tributary of Higher Brook. It has a surface area of ten acres and a drainage area of about one square mile.

CHAPIN POND.

Chapin Pond is located one mile north of Ludlow and drains into the Chicopee River, although it has no visible outlet. It has a surface area of forty-five acres and a drainage area of not more than one-quarter of a square mile.

WOOD POND.

Wood Pond is situated about one-quarter of a mile south of Chapin Pond, drains into the Chicopee River, covers a surface area of thirty-one acres, and has a drainage area of about one-eighth of a square mile.

PICKEREL POND.

Pickerel Pond is located one-quarter of a mile west of Chapin Pond, drains into Chicopee River, has a surface area of eleven acres, and a drainage area of about one-eighth of a square mile.

SHAWS POND.

Shaws Pond is situated a half mile west of Pickerel Pond, drains into the Chicopee River, covers a surface of eleven acres, and has a drainage area of about one-quarter of a square mile.

MINECHOAG POND.

Minechoag Pond is located three-quarters of a mile southeast of Wood Pond, drains into the Chicopee River, covers a surface area of eighteen acres, and has a drainage area of about one-half a square mile.

M O N S O N

There are thirty-nine dams and two natural ponds in Monson. Of the dams one is on the Quaboag River, three on small tributaries of the Quaboag River, eleven on Chicopee Brook, twelve on small tributaries of Chicopee Brook from the west, one on a small tributary of Chicopee Brook from the east, one on Conant Brook, two at Squire's Pond, seven on Twelve Mile Brook, and one on Calkins Brook, a tributary of Twelve Mile Brook. Of the two natural ponds one is known as Duck Pond and the other as Bald Peak Pond.

CENTRAL MASS. ELECTRIC CO. DAM (FORMERLY FEARING, WHITTEN CO. DAM).

The Quaboag River, which is one of the three principal tributaries of the Chicopee River, flows from the Quaboag Pond in Brookfield to the Brookfield-Warren boundary line, thence through Warren, Brimfield and Palmer to Three Rivers where it joins the Swift and Ware Rivers to form the Chicopee River. The Quaboag River is twenty-three miles in length and has a total drainage area of two hundred and ten square miles.

In Blanchardville, so-called, upstream about one and one-half miles from Palmer where the drainage area contributory is one hundred and seventy-seven square miles is a dam now owned by the Central Massachusetts Electric Company, Palmer, Mass., and which formerly belonged to the Fearing, Whitten Company of Boston, Mass. This dam is not on the main stream but formed a pond nearby which was fed from the main stream. It is an earthen embankment faced with concrete, seventy feet in length and eight feet in height. The structure is now a derelict having a free water way through it.

The plant attached to the dam was a woolen mill which afterwards was used for manufacturing leather board. The mill was shut down about ten years ago and is now in ruins.

MONSON STATE HOSPITAL DAM NO. 1.

This structure is on a small tributary of the Quaboag River which rises on the southeast slope of Bald Peak Mountain and flows north to the Quaboag River, into which it empties about half a mile downstream from the mouth of Chicopee Brook. It belongs to the Monson State Hospital and is located on the property of that institution about half a mile upstream from the mouth of the tributary, at a point where the drainage area contributory is about onesquare mile.

The dam is an earthen embankment faced on the upstream side with concrete masonry and on the downstream side with rubble masonry. Its length is one hundred and twenty feet and its height twenty feet. The spillway which is built of concrete is fifteen feet in length and has its crest one foot below the top of the dam. The pond formed is about one-eighth of an acre and is used as an ice pond. The dam is in fair condition, although some minor repairs are needed which were explained to the Hospital authorities at the time of the inspection.

MONSON STATE HOSPITAL DAM NO. 2.

On a small tributary of the last described tributary, into which it empties just below the last described dam, is another dam belonging to the Monson State Hospital. It is also located on the State Hospital land one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is about a quarter of a square mile.

The structure is built of earth excavated, apparently, from the bed of the reservoir which it forms. It is two hundred feet in length and twelve feet in height, with an adequate overflow twelve feet in length at its west end. The reservoir formed covers about one-eighth of an acre and was formerly used as a water supply for the institution. At present it is used as an ice pond.

BRIAND DAM (FORMERLY VAN WAGNER DAM).

This structure is on a small tributary of the Quaboag River, into which it empties from the west about one thousand feet north of the Monson-Palmer boundary line, and belongs to Wilfred J. Briand, 511 Springfield Street, Chicopee, Massachusetts.

It is located on the south side of the Boston road, about a mile west of Palmer and upstream about two thousand feet from the mouth of the tributary, at a point where the drainage area contributory is three-quarters of a square mile. The dam is an earthen embankment one hundred and ninety feet in length and nine feet in height. The pond formed by it covers about two acres and is used as an ice pond.

The plan of the dam is curved, concave upstream, and has two spillways or overflows, one in the center of the structure and another near its south end. The structure was originally built by the Wright Wire Company of Palmer to furnish a water supply, but was abandoned for that purpose some years ago. It is now used as an ice and pleasure pond.

The dam is not in very good condition and is in need of substantial repairs if the pond is to be maintained.

CHURCH MANUFACTURING COMPANY DAM (FORMERLY RUBWOOD WHEEL CO., DAM).

Chicopee Brook rises in a small pond southeast of Peaked Mountain thence flows northerly through the town of Monson to the Quaboag River into which it empties at a point a little southeast of Palmer. It is about eight miles in length and has a total drainage area of twenty-three square miles.

On ascending the brook, the first dam to be found is located about two miles from its mouth, in North Monson, at a point where the drainage area contributory is about twenty-one square miles. It belongs to the Church Mfg. Co., Monson, Mass.

The dam is a masonry faced structure backed with earth. It is eighty-two feet in length and ten feet in height with its west end abutting the highway. The structure was rebuilt about nine years ago and is in good condition.

MOULTON DAM NO. 1.

About a half mile upstream from the last described dam, at a point where the drainage area contributory is twenty square miles, is located a dam belonging to W. C. Moulton, Monson, Mass. This is a spillway structure ninety feet in length, ten feet in height, and built of dry stone masonry backed with earth.

To the structure are attached a gristmill and sawmill. The gristmill ceased to operate years ago, and the sawmill is run only intermittently. The dam was overhauled and repaired about twelve years ago. It is in fair condition except that there are some loose stones in the face of the structure that require resetting. This was brought to the attention of the owner.

MOULTON DAM NO. 2.

This dam is on a tributary of Chicopee Brook into which it empties from the west, a short distance above the dam, last described. It abutts the west side of the highway and is located at a point where the drainage area contributory is about one-third of a square mile. The pond formed covers about a quarter of an acre and is used as an ice pond. The overflow from the pond passes through a culvert under the highway.

SUN-UP LAMP WORKS DAM (FORMERLY HEIMANN & LICHTEN INC. DAM).

On Chicopee Brook, upstream about a mile from the W. C. Moulton Dam No. 1., at a point where the drainage area contributory is fifteen square miles, is a dam belonging to the Sun-Up Lamp Works, 92 Liberty Street, New York.

It is a masonry spillway structure seventy-five feet in length and ten feet in height. It is backed with earth on the upstream side and provided with a horizontal apron along the toe of the spillway. The pond formed by the structure is small and not over an acre and a half in area. The dam is in fair condition except that a few stones in the crest need resetting. Originally the plant attached was a woolen mill and afterwards a hat factory, which shut down for good five years ago. The plant it appears is now going to be used for the manufacturing of electric lamps.

A. D. ELLIS & SONS DAM (CALLED THE NO. 3. DAM).

About a half-mile upstream from the dam last described, at a point where the drainage area contributory is fifteen square miles, is a spillway dam belonging to A. D. Ellis & Sons, Monson, Mass., known as the No. 3 Dam.

This structure is located just south of the main highway through Monson Center. It is curved in plan, convex upstream, built of heavy granite masonry fifty-five feet in length and nineteen feet in height. The structure was built in 1908 and is in good condition. The plant attached is a woolen mill and a going concern.

RICKETTS & SHAW DAM.

Upstream about one thousand feet from the A. D. Ellis & Sons No. 3 dam, last described, at a point where the drainage area is thirteen and one-half square miles, is a dam belonging to Ricketts & Shaw, Monson, Mass.

The dam is a dry stone masonry structure backed with earth. It is not laid across the stream in a straight line, but its plan forms an angle with the apex downstream and with one of the legs seventy-five feet and the other sixty feet in length. The height of the structure is thirteen feet.

The structure is in fair condition. There is some leakage around the angle in the dam and towards the west end which however does not seem to be increasing or to be serious. The pond formed covers about four acres more or less and is partially filled with silt around the dam. The plant attached is a woolen mill and a going concern. Previous to about twenty years ago, it belonged to A. D. Ellis & Sons and was known as the No. 2 Mill.

A. D. ELLIS & SONS (CALLED THE NO. 1. DAM).

Five hundred feet upstream from the Ricketts & Shaw dam, last described, at a point where the drainage area contributory is thirteen and one-half square

miles, is dam belonging to A. D. Ellis & Sons, known as the No. 1. dam. It is a stone masonry spillway structure backed with earth, eighty feet in length, and sixteen feet in height. The dam is in good condition. It was repaired a few years ago when a concrete crest was provided. The plant attached, like that attached to the A. D. Ellis & Sons No. 3. dam is a woolen mill and a going concern.

MONSON ASSOCIATES CORP. DAM.

About two thousand feet upstream from the A. D. Ellis & Sons No. 1. dam, at a point where the drainage area contributory is five square miles, is a dam now or formerly belonging to the Monson Associates Corporation, Monson, Mass.

This is a stone spillway structure backed with earth. It is fifty feet in length and eleven feet in height. The pond formed is very small and practically filled with silt. The dam diverts water into a canal and forebay connected with the mill about one thousand feet below. The dam is in fair condition. The woolen mill attached however has been within a year or so destroyed by fire.

MOULTON DAM NO. 3.

Farther upstream about a mile and a half from the Monson Associates Corporation dam, last described, at a point where the drainage area contributory is about two square miles, is a third dam belonging to W. C. Moulton, Mass.

It is a dry stone spillway structure backed with earth, seventy feet in length and nine feet in height. The pond formed by the structure is of considerable size from which the water was taken to run a sawmill. The sawmill is now abandoned and in a dilapidated condition, with penstock and gates connected therewith broken down and in a state of ruin.

The dam proper is in good condition and the pond formed is now used as an ice pond.

ALDRICH DAM.

Upstream about a mile and a quarter from the W. C. Moulton Dam No. 3, last described, was located the Aldrich pond and dam. At present there is no pond and only a small part of the dam remains.

C. P. BRADWAY DAM NO. 1.

About a half mile upstream from the Aldrich dam, last described, or a mile and three-quarters from the W. C. Moulton dam No. 3, at a point about sixty feet south of the highway, where the drainage area contributory is a little over a quarter of a square mile, is a dam belonging now or formerly to C. P. Bradway, West Stafford, Connecticut.

It is an earthen embankment faced with dry stone masonry to which is attached a work shop long abandoned and now in a dilapidated condition. The dam is about sixty feet in length and eight feet in height. An opening has been made through the structure and a free waterway for the flow of the brook established.

C. P. BRADWAY DAM NO. 2.

Eight hundred feet upstream from the C. P. Bradway dam No. 1, at a point where the drainage area contributory is about a quarter of a square mile is another dam now or formerly belonging to C. P. Bradway,

It is an earthen embankment faced downstream with dry stone masonry and upstream with cobblestone laid as a riprap. The structure is seventy-five feet in length, eleven feet in height and about thirteen feet in width on top. The pond formed covers about five acres and the water is conveyed therefrom in a pipe to the sawmill at the foot of the hill five hundred feet below. The "head" or fall created is at least seventy feet. The sawmill has apparently gone out of business for good.

The dam requires some substantial repairs and it is advisable to lower the pond at least two feet until such repairs are made.

BUMSTEAD ESTATE DAM.

On a tributary of Chicopee Brook that rises about three-quarters of a mile northeast of Peaked Mountain and flows directly east to Chicopee Brook into which it empties about half a mile upstream from the Smith Pond, so-called, is a dam now or formerly belonging to the Horace Bumstead Estate, Monson, Mass.

This structure is located just west of the highway that crosses the brook about one thousand feet from its mouth, and has a drainage area contributory of less than one-quarter of a square mile. It is an earthen embankment faced with dry stone masonry, seventy feet in length and six feet in height. The pond formed, which is used as a fishing pond, is small and only a few feet in depth. The dam is in fair condition, except at the south side of the spillway where the stone work requires relaying preferably in cement mortar.

CALKINS DAM.

On a tributary that rises on the east slope of West Hill and flows easterly, southerly and easterly to Chicopee Brook, into which it empties about a half mile downstream from the Smith Pond, so-called, is a dam belonging to Judson R. Calkins, Monson, Mass.

The structure is located about three-quarters of a mile from the mouth of the tributary at a point in close proximity to the highway that crosses the tributary, where the drainage area is three-quarters of a square mile. It is an earthen embankment faced with dry cobblestone masonry on the downstream side. The spillway or overflow is built of heavy masonry and is a stable structure. The pond formed by the dam is a considerable body of water which covers about ten acres and is used as an ice pond. The top of the dam is only about one foot above the crest of the spillway and should be raised to make a freeboard of at least two feet above the crest of the spillway.

ROSS DAM (FORMERLY LABELLE DAM).

Upstream about a mile from the Calkins dam, at a point five or six hundred feet west of the highway where the drainage area contributory is about one-tenth of a square mile, is a dam belonging to the Rev. E. M. Ross of East Longmeadow, Mass.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and about three feet in height. The pond formed covers about a quarter of an acre and is used as an ice pond. The dam is in fair condition but should it fail, no damage would result from the small pondage released.

MEACHAM DAM.

On a tributary of the brook last described, into which it empties about one thousand feet downstream from the Calkins dam, is a dam now or formerly belonging to W. G. Meacham, Monson, Mass. This dam is located about eight hundred feet from the mouth of the tributary, at a point where the drainage area contributory is less than a quarter of a square mile.

It is an earthen embankment eighty feet in length and not over two and a half feet in height. The pond formed covers about an acre and is used as a fishing pond. It seems to be a natural pond raised by the dam. The dam is in fair condition but should it fail no damage would result from the released water.

KASPERZAK DAM.

On a tributary of Chicopee Brook that rises on the east slope of West Hill and flows east to the Chicopee Brook into which it empties at the A. D. Ellis & Sons No. 1 dam, is a dam belonging to Joseph Kasperzak, Monson, Mass. This structure is located at a point about a mile from the mouth of the stream and about five hundred feet west of the highway where the drainage area contributory is a half a square mile.

It is an earthen embankment one hundred and eight feet in length and five feet in height. The overflow is a culvert laid through the structure from a well located in the upstream face of the dam. The pond formed is small and is used as an ice pond. The dam is in fair condition, If it failed however, because of the small pondage, no damage would result from the released water.

C. A. BRADWAY DAM.

On a very small tributary of Chicopee Brook, which it joins about a quarter of a mile downstream from the Sun-Up Lamp Works dam above described, is a dam belonging to C. A. Bradway, Monson, Mass. This structure is located on the westerly side of Ely Road at a point where the drainage area contributory is less than a quarter of a square mile.

It is a stone structure fifty feet in length and five feet in height backed with earth. The pond formed by the structure is very small and filled with silt. The dam is now a derelict and backs up no water.

BEAUCAGE DAM.

About one hundred feet upstream from the dam last described and likewise on the westerly side of Ely Road, is an ice dam belonging to G. J. Beaucage, Ely Road, Monson, Mass. It was built in 1930 of dry stone and earth with a concrete lining wall ten inches in thickness. The dam is only twenty-six feet in length and five feet in height. The spillway is located ten feet from its north end and is four feet in width with its crest one foot below the top of the dam. The pond formed by the dam is so small that even if the structure failed completely no material damage would result from the released water.

SULLIVAN BROTHERS DAM.

Sullivan Brook rises in Smith Pond on the east slope of West Hill, flows northerly and thence easterly through Monson Center to Chicopee Brook, into which it empties about a half mile downstream from the Sun-Up Lamp Works Dam, above described. The brook is about two and a half miles in length and has a drainage area of two square miles. There are four dams on the brook.

The first dam found upon ascending the brook is located at a point about two thousand feet upstream from its mouth, on the north side of Mill Street where the drainage area contributory is about two square miles, and belongs to William and Cornelius Sullivan, Monson, Mass.

It is a dry stone masonry spillway structure backed with earth sixty-six feet in length, and thirteen and one-half feet in height. The spillway is twenty-six feet in length with its crest two and one-half feet below the top of the dam. The pond formed by the structure is very small and practically filled with silt. From the pond is laid a pipe about six hundred feet in length to a small artificial reservoir which is the forebay for the cider mill attached. This cider mill which is still a going concern was formerly a box factory. The dam is in fair condition, except that some of the stones in the facing wall at the south end required resetting.

DEPACE DAM (FORMERLY GOLD DAM).

About five hundred feet upstream from the Sullivan Brothers dam, at a point where the drainage area contributory is practically two square miles, is a dam belonging to Luigi Depace, Monson, Mass.

It is a dry stone masonry spillway structure backed with earth thirty-one feet in length between abutments and nine feet in height. The pond is small and the dam is in fair condition. The wagon snap which is still attached to the dam has not been operated for years.

BURDICK DAM.

Three hundred feet upstream from the last described dam and across the highway from the latter, at a point where the drainage area is a little less than two square miles, is a dam belonging now or formerly to James J. Burdick, Monson, Massachusetts.

It is an earthen embankment two hundred and twenty feet in length and fourteen feet in height, faced downstream with heavy stone. The spillway is thirty feet in length with its crest two feet below the top of the embankment and is located in the middle of the structure. It is built of derrick stone coped with concrete and backed with earth.

The pondage covers about an acre and is a shallow body of water. The dam is in fair condition. To it is attached a machine shop which has not been operated for some time and apparently has been shut down for good.

EATON DAM (FORMERLY FLINT DAM).

On the headwaters of Sullivan Brook at the outlet of Smith Pond, so-called, where the drainage area contributory is a quarter of a square mile, is a dam belonging to G. C. Eaton, Pomona Street, Springfield, Mass.

The structure is an earthen embankment faced upstream and downstream with stone riprap. It is one hundred and twenty-five feet in length and six feet in height. Its overflow is located about thirty feet from its north end, is four feet in length with the crest eight inches below the top of the dam. Under the overflow is laid a ten inch pipe through the dam. This pipe leads from a concrete wall fitted with movable stop planks by which the height of the pond can be regulated. The area of the pond is about fifteen acres and it appears that the pond is a natural one raised by the dam.

The dam is in fair condition. To increase its safety the top of the embankment should be raised to a height at least two feet above the crest of the overflow.

ANDERSON DAM.

On a small tributary of Chicopee River into which it empties from the east at Monson Center is a dam belonging to W. H. Anderson, Monson, Mass. It is located about half a mile upstream from the mouth of the tributary and three-quarters of a mile west of Monson Center at a point where the drainage area contributory is half a square mile.

The dam is an earthen embankment curved in plan, concave upstream, Its downstream slope is built of dry cobblestone. The structure is two hundred feet in length, twelve feet in height and ten feet wide at the top.

It is the old dam which formed the Sullivan Ice Pond, so-called, overhauled and repaired. There is a spillway located in the center of the structure and an overflow in the natural ground at the north end. The spillway in the dam is built of concrete with its crest two feet below the top of the structure. This spillway, in which stop planks are used, is for regulating the height of the pond under normal conditions as in time of high water the waste water passes through the overflow located at the north end of the structure. The dam is in fair condition. From it there is some leakage which does not appear serious. The pond formed by the structure covers about an acre.

TOWN OF MONSON WATER WORKS DAM.

Conant Brook rises in the town of Wales about one and a half miles southwest of Wales Center, flows southwest and then northwest into and through Monson to the Chicopee Brook which it joins at South Monson. Conant Brook is five miles in length and has a total drainage area of about eight square miles.

Upstream about a mile and a quarter from its mouth, at a point where the drainage area contributory is seven and a half square miles is located a dam belonging to the town of Monson Water Works. It is an earthen embankment faced with masonry on its up and downstream sides, one hundred and fifty feet in length and sixteen feet in height. The spillway is located in the middle of the structure, and has a concrete crest two feet below the top of the dam. The dam is in good condition and forms a pond of a couple of acres.

SQUIRE DAMS.

On Ingalls Brook, at a point where the drainage area contributory is one-tenth of a square mile, is a dam belonging to Edgar Squire, R. F. D., Monson, Mass. It is an earthen embankment eighty feet in length and six feet in height. This dam is in fair condition.

At the north end of the pond there is another small dam in which the spillway is located. The spillway is twelve feet in length and only a few feet in height. This dam is also in fair condition except at its west end where some of the facing stones on the downstream side need resetting. The pond formed by these dams covers about four acres and is known as Squires Pond.

GREEN DAMS.

Four dams belonging to S. M. Green, Springfield, Mass., are located in close proximity to each other near Silver Street and about one-half mile east of the Monson-Wilbraham boundary line. Two of these dams are built across Twelve Mile Brook (described under Wilbraham) and have a drainage area of about five square miles. The other two are built near the mouth of a small tributary of Twelve Mile Brook and have a natural drainage area of about one and one-half square miles.

DAM NO. 1.

The first or dam farthest downstream is located on the tributary above described and forms a pond of about one-half an acre in area. The dam is a stone masonry structure backed with earth, one hundred and fifty feet in length and ten feet in height. It has two concrete overflows, one at its south end about twenty-five feet in length and the other at its north end six feet in length.

DAM NO. 2.

Upstream on the tributary about two hundred feet from the dam last described is an earthen dam built in 1922, one hundred and ninety-five feet in length and fifteen feet in height. It is provided with an ample spillway and, together with the dam next to be described forms one pond of about twenty-four acres in area.

DAM NO. 3.

The next dam, also built in 1922 is on Twelve Mile Brook about five hundred feet east of the dam last mentioned. It is also an earthen embankment one hundred and eighty feet in length and sixteen feet in height. It is provided with an ample spillway.

DAM NO. 4.

The last dam is located on Twelve Mile Brook about three hundred feet upstream from the twenty-four acre pond formed by the two dams last described. It is an old dry stone masonry structure backed with earth, two hundred feet in length and fifteen feet in height. The spillway is fifty feet in length, with its crest three feet below the top of the dam. This dam, with its pond of about one-half acre in area, was years ago used to furnish power to a flock mill of which only a few foundation stones now remain.

All these four dams are in good condition, and the ponds formed are used as pleasure ponds.

BALDWIN DAM NO 1.

About one thousand feet upstream from the S. M. Green dam No. 4, last described, where the drainage area contributory is about five square miles, is an earthen dam belonging to Dr. R. A. Baldwin, 162 Long Hill Street, Springfield, Mass.

This structure is backed by the highway in front of which is a concrete spillway discharging into a culvert laid under the highway. The dam is ten feet in height. The pond formed covers about five acres and is now used as a pleasure pond. Years ago it was known as the Davis Pond to which a flock mill and sawmill were attached. The dam is in fair condition.

BALDWIN DAM NO. 2.

About two thousand feet upstream from the Baldwin dam No. 1, last described, at a point where the drainage area contributory is four square miles, is a second dam which belongs to Dr. R. A. Baldwin. This is a dry stone masonry structure backed with earth, two hundred and twenty-five feet in length and about ten feet in height. The length of the spillway, which is in the center of the dam, is forty-five feet, with its crest two feet below the top of the dam. The structure is in fair condition.

This dam forms a pond known as Silver Lake, but formerly known as Friday Pond. It covers about five or six acres and is used for fishing and pleasure purposes. Years ago this pond was used as a storage from which water was drawn in a canal to the flock mill and sawmill mentioned under Baldwin dam No. 1.

REMINGTON DAM.

The next and last dam on Twelve Mile Brook from its mouth, is located about two miles upstream from the Baldwin dam No. 2., last described, at a point where the drainage area is one and one-half square miles, and belongs to William B. Remington of Springfield, Mass.

It is an earthen embankment one hundred and seventy feet in length and fifteen feet in height faced downstream with dry stone masonry. The spillway is twenty-four feet in length with its crest two feet below the top of the dam. Formerly there was a sawmill and a gristmill attached to the structure, but these went out of existence years ago. The pond formed by the structure covers about three acres and apparently is now used as a fishing and pleasure pond. The dam has been repaired and is now in fair condition.

NICOLET DAM.

Calkins Brook rises on the west slope of Bald Peak in Monson, flows westerly to the Monson-Wilbraham boundary line, thence through Wilbraham to Twelve Mile Brook into which it empties at Ellis Mills. It is about two miles in length and has a total drainage area of three and a quarter square miles.

About three-quarters of a mile upstream from its mouth, at a point where the drainage area contributory is two and three-quarters square miles, is located a dam belonging to Anna D. Nicolet, Monson, Mass.

It is an earthen embankment faced downstream with cobblestone, one hundred and forty-five feet in length and twenty feet in height. Its top is thirty-one feet in width and was used as a mill yard. The spillway is a sluice gate connected with the mouth of a culvert five by seven feet in section laid through the south end of the dam. The sawmill attached is located against the

downstream slope, and after operating intermittently for some years, is now apparently shut down for good. At this place, which was then known as Calkins Mills, gun stocks were made for the Government and brake shoes for the Boston & Albany Railroad.

A few years ago, on the advice of the county, a surface overflow in the form of a swale was added to the structure at the south end. The dam is now in fair condition.

DUCK POND.

Duck Pond is situated in the western part of the town of Monson, about two miles southeast of South Monson Center, covers about three acres and has about one-quarter of a square mile of drainage area. It has no dam across its outlet.

BALD PEAK POND.

Bald Peak Pond is near the top of Bald Peak Mountain about three-quarters of a mile southwest of the Monson State Hospital. It drains into a small tributary of the Quaboag River and has a drainage area apparently less than one-quarter of a square mile. There is no dam across its outlet.

M O N T G O M E R Y

In Montgomery there are seven dams and one natural pond. Of the dams, three are on Moose Meadow Brook, one on a small tributary of Moose Meadow Brook, one on Sackett Brook, one on Roaring Brook, and one on a tributary of Roaring Brook.

CITY OF WESTFIELD WATER WORKS DAM NO. 1.

Moose Meadow Brook rises in the town of Montgomery on the west slope of Bungy Hill, flows south and southwest through Montgomery and Westfield to the Westfield River into which it empties about two miles downstream from the Westfield-Russell boundary line. It is six and a half miles in length and has a total drainage area of six and a half square miles.

Near its intersection with the Montgomery-Westfield boundary line, at a point where the drainage area contributory is four and a half square miles, is located a dam belonging to the City of Westfield Water Works. This dam is a stone masonry structure backed with gravel on a rock foundation and was built in 1874. It is two hundred feet in length and about thirty feet in height.

The spillway is thirty-one feet in length, with its crest two and a half feet below the top of the dam. The reservoir formed by the structure is the intake of the Montgomery system of the Westfield Water Supply.

CITY OF WESTFIELD WATER WORKS DAM NO. 2.

About two miles upstream from the intake reservoir at a point where the drainage area contributory is two square miles, is located the Westfield Water Works Storage Reservoir. This covers a surface area of about thirty-eight acres. The dam forming the reservoir is an earthen embankment three hundred and sixty feet in length and about thirty feet in height. It was built in 1874.

The spillway is located at the east end of the dam and is built of concrete. It is nineteen feet in length with its crest five feet below the top of the dam. The spillway discharges into a concrete channel which conducts the water away from the toe of the dam to the brook below, a distance of about three or four hundred feet.

CITY OF WESTFIELD WATER WORKS DAM NO. 3.

The next and third dam belonging to the Westfield Water Works on Moose Meadow Brook is about a half mile upstream from the storage reservoir dam, at a point where the drainage area is one and a half square miles.

This is a stone structure sixty-five feet in length and seven feet in height with its spillway at the east end. It was a sawmill dam before the Westfield Water Works purchased it, apparently for the protection of the watershed. Since it was purchased, it is used only as a storage dam.

All these three reservoir dams are in good condition and under the constant supervision of the officers of the City of Westfield Water Department.

HALL DAM.

On a small brook that is a tributary of Moose Meadow Brook, into which it empties at the northwest corner of the Westfield Storage Reservoir, is an ice pond dam belonging to Andrew J. Hall, Montgomery, Mass.

It is located about one-half a mile upstream from the reservoir at a point where the drainage area is not more than one-quarter of a square mile. The dam is a stone structure about thirty-five feet in length and six feet in height. The pond formed, however, is only thirty-five by fifty feet and shallow. Ice is no longer cut on the pond and both pond and dam are abandoned, the latter becoming a derelict.

DEAN DAM.

Sackett Brook rises in the town of Montgomery on the southeast slope of Bungy Hill, flows southeasterly through Montgomery and Southampton to the West Branch of the Manhan River, into which it empties at Russellville. Sackett Brook is two and a quarter miles in length and has a total drainage area of two and one-third square miles.

About a half mile northeast of Montgomery Center or two miles from the mouth of the brook, at a point where the drainage area contributory is one-third of a square mile, is located a dam belonging to Oscar B. Dean, Montgomery and Springfield, Mass. It is an earthen embankment one hundred and fifty feet in length and five feet in height, faced upstream with a stone masonry wall one foot in thickness. The spillway is located seventy-two feet from its north end.

The structure is in fair condition with the exception of a little leakage around the end of its spillway. Should the structure fail, however, because of the very small size of the pond, which is used for pleasure purposes only, no damage would be caused by the released water.

CLARK DAM.

Roaring Brook rises on Norwich Hill in the town of Huntington, flows west and south through Montgomery to the Westfield River into which it empties about a half mile downstream from the Montgomery-Huntington boundary line. It is five miles in length and has a total drainage area of five and a half square miles.

About fifteen hundred feet upstream from its mouth at a point where the drainage area contributory is five and one-third square miles, are located the remains of a dam belonging to Ledru R. Clark, Box 25, Huntington, Mass. This structure had a sawmill attached which was known in the seventies as the Fowler sawmill. At present only traces of the dam and mill remain, the latter having ceased operations over forty years ago.

TINDAL DAM.

Two miles northwest of Montgomery Center on a tributary of Roaring Brook, at a point where the drainage area contributory is one-quarter of a square mile, is an ice pond dam belonging to David Tindal of Montgomery, Mass.

It is an earthen embankment faced upstream and downstream with stone masonry with the upstream masonry plastered. The overflow is located in the dam

thirty feet from the south end. The length of the structure is about two hundred feet and its height five and a half feet. The dam was overhauled and repaired about ten years ago and is in fair condition. The pond formed is less than an acre in area, and if suddenly released by failure of the structure would cause no material damage.

SHATTERACK POND.

Shatterack Pond is the only natural pond in the town of Montgomery. It is located about one-half mile southwest of Montgomery Center on the headwaters of Shatterack Brook, has a surface area of about seventeen acres, and a drainage area of not over a quarter of a square mile.

P A L M E R

There are twenty-two dams and three natural ponds in the town of Palmer. Of the dams one is on the Chicopee River, namely the Otis Company dam already described under Chicopee River Dams, three on Swift River, one on a small tributary of the Swift River, two on the Ware River, four on Gates Brook, Three on a tributary of Gates Brook, one on the Quaboag River, two on Mt. Dumpling Brook, four on Graves Brook, and one on Kings Brook. The natural ponds are Lily Pond, Brown Pond and Pattaquattic Lake.

OTIS COMPANY DAM AT BARRETT'S JUNCTION (FORMERLY BOSTON DUCK CO. DAM).

Swift River rises in North Pond in the town of Orange, Franklin County, thence flows into and across Hampshire County to Bondsville, from which place to its junction with the Ware River at or near the village of Three Rivers it forms the Hampden-Hampshire County line. Its length from North Pond is about thirty miles and its total drainage area two hundred and thirteen square miles.

About two miles upstream from its mouth, at Barrett's Junction, so-called, are traces of an old wooden dam which was one hundred and twenty feet in length and ten feet in height. To this structure was attached some years ago the Springfield Soapstone Company plant, where a head or fall of twenty feet was developed by the building of a long canal between the dam or mill pond and the plant. The soapstone plant went out of existence years ago.

In 1918 or thereabouts, the property passed into the hands of the Boston Duck Company from which it was recently purchased by the Otis Company. Neither of these latter owners made any attempt to restore the dam and the small portion that now remains is of no account.

OTIS COMPANY DAM AT BONDSVILLE (FORMERLY BOSTON DUCK CO. DAM).

Upstream in the village of Bondsville, at a point where the drainage area contributory is one hundred and ninety-five square miles is a dam belonging to the Otis Company.

It is a stone masonry spillway structure one hundred and forty-six feet in length and fourteen feet in height. Along its downstream toe is laid a horizontal apron, fifteen feet in width and built of huge granite blocks. The upstream side of the dam is filled with cobblestones and silt. At its east end is a forebay from which a canal is laid to the hydro-electric power house some hundreds of feet downstream, in which place electric energy is generated for the company's mills. The dam and all appurtenances are in good condition. The pond formed by the structure has a surface area of about six acres.

OTIS COMPANY DAM AT DUCKVILLE (FORMERLY BOSTON DUCK CO. DAM).

About a half mile upstream from the last described dam, at a point where the drainage area contributory is one hundred ninety-four and a half square miles is another dam belonging to the Otis Company.

This is a stone masonry spillway structure one hundred and thirty-two feet in length and fifteen feet in height. Like the Bondsville dam there is also laid along the toe of the structure a horizontal apron fourteen feet in width built of huge granite blocks. From the south end of the dam the water is taken in a canal to the water wheels in the mills attached. The pond formed is fifty-seven acres in area. The dam and appurtenances are in good condition.

OTIS COMPANY RESERVOIR DAM (FORMERLY BOSTON DUCK CO. DAM).

On a small tributary of the Swift River, into which it empties just above the Duckville dam, is another dam belonging to the Otis Company. This structure is located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is about a quarter of a square mile.

This dam is an earthen embankment four hundred and fifteen feet in length, ten feet in height and ten feet in width on top. It forms a reservoir of about eight acres and was built for the purpose of a water supply and fire protection for the Duckville Mills. Through the dam is laid an overflow pipe twelve inches in diameter, which experience has shown is adequate, as the pond never has topped the embankment since the reservoir was built years ago. The structure is in good condition.

COLGAN & SHERMAN INC. DAM NO. 1 (FORMERLY THORNDIKE CO. DAM NO. 1).

Ware River, the largest of the three rivers that form the Chicopee River, rises in the town of Westminister, Worcester County, flows southwesterly to Ware in Hampshire County, thence to and through Palmer to Three Rivers, where it joins the Swift River. Its drainage area is two hundred and twenty-one square miles.

In Thorndike, about a mile and a half upstream from its junction with the Swift River, where the drainage area contributory is two hundred and eighteen square miles, is located a dam belonging to Colgan & Sherman Inc., Palmer, Mass.

The dam is a stone masonry spillway structure laid on a ledge and hardpan foundation. It is one hundred and sixty feet in length and fourteen feet in height. The structure was repaired and a new crest added about fifteen years ago. It is now in fair condition. The pond formed is about four acres in area and the water is taken therefrom in a canal to the water wheels in the mill attached.

COLGAN & SHERMAN INC. DAM NO. 2 (FORMERLY THORNDIKE CO. DAM NO. 2).

About a half mile upstream from the Thorndike Company dam No. 1, last described, at a point where the drainage area contributory is two hundred and eighteen square miles is located another dam belonging to Colgan & Sherman Inc., Palmer, Mass.

It is a gravity masonry concrete spillway structure of the Ogee type, which replaced, about seventeen years ago, an old log crib structure. The dam is one hundred and seventy-four feet in length and seventeen feet in height. The dam is in good condition and forms a pondage of about twenty acres.

HOLBROOK DAM NO. 1 (FORMERLY THORNDIKE CO. DAM NO. 3).

Gates Brook rises in Lake Thompson about a mile southeast of Palmer Old Center and flows north to the Ware River into which it empties about a mile upstream from Whipple's Station. The brook is three miles in length and has a total drainage area of four square miles.

At a point a short distance upstream from its mouth, where the drainage area is very little less than four square miles, is a dam belonging to Arthur W. Holbrook, Palmer, Mass. This dam was formerly owned by the Thorndike Company.

It is a stone masonry spillway structure backed with earth, thirty-five feet in length, six feet in height, with its east end abutting the Ware River

branch of the Boston & Albany Railroad and its west end abutting the highway. The waste water after crossing the spillway, is conveyed through a culvert laid under the highway. The dam is in fair condition and forms Forest Lake, formerly known as Newell's Pond, a large body of water which covers an area of sixty-two acres. In the seventies there was attached to this dam a sawmill of which only traces are now left.

STATE FISH HATCHERY DAMS.

There are two dams about one thousand feet apart located about one mile northeast of Palmer Old Center on Gates Brook where the drainage area contributory is two square miles. These dams belong to the State of Massachusetts and form ponds for the State Hatchery.

The upper dam is a concrete spillway structure sixty feet in length and nine feet in height. It is in fair condition, is of light section, and was built in 1911 or 1912. The pond formed is very small. From it water is drawn through a pipe to the hatchery, etc.

The lower dam is a low structure only a few feet in height. It is in fair condition and forms a pond of about two acres.

LIEGE DAM (LAKE THOMPSON DAM).

On the outlet of Thompson Lake, which is the headwaters of Gates Brook, at a point where the drainage area contributory is one square mile, is a dam belonging now to P. H. Liege and formerly to the John W. Boyle Realty Company, Springfield, Mass.

The dam is an earthen embankment faced upstream with a concrete wall about one foot in thickness and downstream with dry stone masonry two feet in thickness at the top. Its length is eighty-two feet, height eleven feet, and its width on top thirty-four feet. The overflow or spillway, located near the center of the dam, is a swale built of concrete across the top of the dam, ten feet in width at its upstream end and narrowing toward its downstream end. Behind the dam is a large body of water which covers forty or more acres.

The dam is in fair condition as repairs advised by the County were made on it a few years ago. To it was attached a sawmill which went out of existence years ago. This sawmill was located on the north or downstream side of the highway passing the dam. It was known as the Calkins sawmill and the pond as Calkins Pond. Over twenty years ago the dam and pond were raised about six feet and since then the pond is known as Lake Thompson.

PALMER TOWN FARM DAM.

On a tributary of Gates Brook from the west, at a point about two hundred and fifty feet south of the highway leading from Palmer Old Center to the town of Warren, Worcester County, where the drainage area is two-tenths of a square mile, is located a small ice pond dam belonging to the Palmer Town Farm.

It is an earthen structure sixty-seven feet in length, six feet in height and seven feet in width on top. The spillway or overflow is twenty-five feet from the west end and is a stone drain laid through the top of the embankment. This drain is connected with a wooden sluice box laid down the slope to the toe and beyond the toe of the structure. The pond formed by the dam is less than a

quarter of an acre and its capacity is so small that in case of failure of the dam it is not likely that any damage would result from the released water. Nevertheless, because of the pond being so near the highway, the superintendent of the Town Farm was advised to increase the factor of safety of the dam by increasing the capacity of the spillway.

HOLDEN DAMS.

Upstream from the Town Farm dam, and at a point where the drainage area contributory is less than one-tenth of a square mile are two small dams owned by M. William Holden, 431 Main Street, Palmer, Mass.

These dams were built about twelve years ago by the Thorndike Co. to form storage reservoirs for the water supply of the village of Thorndike. In 1926 the plant was purchased by the present owner and the reservoirs formed by the dams are still being used as the source of water supply for the village.

The first or lower dam is an earthen embankment sixty feet in length and six feet in height, faced on the upstream side with a concrete wall eight inches in thickness. The overflow is in the form of a wooden sluiceway built into the surface of the embankment near its center. The area of the reservoir formed is only about one-tenth of an acre.

The second dam is located upstream about one hundred feet from the first and at the end of the pond formed by the latter. This upper dam is an earthen embankment seventy-five feet in length, eight feet in height above the streambed, and has a top width of eight feet. A wood sluice surface overflow six feet in length and sixteen inches in depth is constructed in the surface of the embankment. The area of the reservoir formed is about two-tenths of an acre. The dams are in fair condition and the combined storage of both reservoirs is less than a half a million of gallons.

CENTRAL MASSACHUSETTS ELECTRIC COMPANY DAM.

On the Quaboag River, described under Monson, at Blanchardville, so-called, where the drainage area contributory is one hundred and seventy-seven square miles is a dam belonging to the Central Massachusetts Electric Company.

The dam is a log crib spillway structure sloped up and downstream and backed with earth. It is one hundred and nine feet in length between abutments and seventeen and a half feet in height. To its downstream toe is attached a horizontal apron built of planking fifteen feet in width. The structure is in fair condition except that a part of the planking on the downstream face needs replacing.

HOLBROOK DAM NO. 2.

Mount Dumluping Brook rises about a half mile southwest of Palmer Old Center and flows southwesterly to the Quaboag River into which it empties at the foot of Mount Dumluping. It is one and a half miles in length and has a total drainage area of one and one-third square miles. Upstream about three-quarters of a mile from its mouth, at a point where the drainage area contributory is three-quarters of a square mile, is located an ice pond dam belonging now or formerly to Arthur Holbrook, Palmer, Mass.

The dam is a wooden structure of the post deck type, backed upstream with gravel. It is one hundred and eighty feet in length of which one hundred and thirty feet is a spillway with planking higher than the fill behind it. The height of the dam is eight feet. The structure is now a derelict wearing away by attrition and forms little pondage.

LA BOSSIERE DAM.

Upstream about a quarter of a mile from the Holbrook dam, last described, at a point where the drainage area contributory is one-half a square mile, is an ice pond dam belonging to Hermas C. Labossiere, Palmer, Mass.

It is an earthen embankment two hundred and sixty-one feet in length, twelve feet or thereabouts in height, and eight feet wide on top. There are two spillways; one being a two foot pipe laid through the dam from a well containing stop planks, built in the pond at the upstream toe of the structure; and the other a surface spillway ten feet in length built at the west end of the dam. The latter overflow was constructed about five years ago at the request of the County. The pond formed by the dam is about five acres in area.

WHITTALL ASSOCIATES DAMS.

Graves Brook rises about one and a quarter miles southeast of Palmer Old Center and flows south through Tennyville, so-called, to the Quabog River. It is one and a half miles in length and has a total drainage area of about one square mile.

There are two dams on this brook that belong to the M. J. Whittall Associates, makers of rugs and carpets, Palmer, Mass. They are located near the factory buildings of the company in close proximity to each other. The drainage area of these dams is about three-quarters of a square mile. The pondage formed is used for process water and fire protection for the mill. The storage capacity however is so small that no material damage would result even from the failure of both dams at the same time.

PALMER WATER WORKS DAMS.

There are two other dams on Graves Brook besides those last mentioned, which belong to the Palmer Fire District No. 1 and are known as the Intake and Storage Reservoir dams. They are located in close proximity to each other a short distance upstream from the M. J. Whittall Associates dams, last described, at a point on the brook where the drainage area contributory is a half square mile.. The surface area of the Intake Reservoir is one acre and that of the Storage Reservoir four acres.

The Intake dam is an earthen embankment one hundred and eighty-six feet in length, twelve feet in height and thirteen feet in width on top. The overflow is located at the west end and is nine and a half feet in length with its crest three feet below the top of the embankment. From its crest extends a concrete channel which connects with the bed of the stream below the toe of the dam. The dam proper is in good condition. The overflow channel, however, downstream from the toe of the dam needs repairs.

About five hundred feet upstream from the Intake dam is the Storage Reservoir dam. It is also an earthen embankment two hundred and seventy feet in length, eighteen feet in height (estimated), and twenty feet in width on top.

The spillway is at its west end, ten feet in length with its crest four feet below the top of the dam. It is built of concrete from which a concrete channel extends around the toe of the dam and discharges into the Intake Reservoir. The dam is paved with stone on the upstream slope and together with its appurtenances is in good condition. Both dams are under the supervision of the officers of the Palmer Fire District No. 1.

MAHONEY DAM.

King Brook rises on the south and east slopes of Pattaquattic Hill and flows south to the Quaboug River, into which it empties about one mile south of West Brimfield. King Brook is four miles in length and has a total drainage area of about four square miles.

About two and a half miles upstream from its mouth, at a point where the drainage area contributory is one and three-quarters square miles, are the traces of a dam on property belonging now or formerly to Dennis Mahoney, Palmer, Mass. Long ago there was attached to this dam a gristmill of which only a few foundation stones now remain. Small portions of the abutments and a few stones across the bed of the brook are all that is left of the dam.

PATTAQUATTIC LAKE.

Pattaquattic Lake is situated about two miles north of Palmer Old Center, flows into the Ware River, has a surface area of about nineteen acres, and a drainage area of one-half a square mile.

BROWN POND.

Brown Pond is located one and a quarter miles northwest of the village of Thorndike, flows into the Swift River, has a surface area of about thirteen acres and a drainage area of a quarter of a square mile.

LILY POND.

Lily Pond is located in Bondsville, drains into the Swift River, has a surface of about three or four acres and a drainage area of not more than one-tenth of a square mile. There are no dams across the outlets of these ponds.

R U S S E L L

Of the eight dams in Russell, three are on the Westfield River, two on Westfield Little River, one on Potash Brook, one on Pond Brook, and one on Black Brook.

The three dams on the Westfield River, namely the Strathmore Paper Company dam, the Westfield River Paper Company dam, and the Chapin & Gould Paper Company dam are described with the other dams on the Westfield River under the Westfield River Dams.

CITY OF SPRINGFIELD WATER WORKS INTAKE DAM.

Westfield Little River is formed in the southeast corner of the town of Blandford by the union of Borden and Peeble Brooks. It flows southeasterly about a half mile to the Blandford-Russell boundary line, thence through Russell and Westfield, forming a part of the boundary line between these two towns, and empties into the Westfield River at a point about two and a half miles upstream from the Westfield-West Springfield boundary line. It is about eleven and a half miles in length and has a total drainage area of eighty-four square miles.

In the southeast corner of the town of Russell, in the gorge of the Westfield Little River, at a point where the drainage area is forty-eight square miles, is located the City of Springfield Water Works Little River System Intake dam. It is a concrete masonry spillway structure curved in plan and built in 1909. It is one hundred and fifty-five feet in length and fifty feet in height, laid on a ledge foundation.

This dam, being part of the City of Springfield Water Works Little River System, is under the careful supervision of the officers of the Springfield Water Department.

CITY OF SPRINGFIELD WATER WORKS COBBLE MOUNTAIN DAM.

About two miles upstream from the Intake dam last described, and in the southwest corner of the town of Russell, where the drainage area contributory is about forty-six square miles, is located the Cobble Mountain Reservoir dam of the City of Springfield. The construction of this dam was begun in 1928 shortly after the plans were approved by the County, and the dam proper was completed in the early part of 1932.

This dam is an earthen structure built by the hydraulic and semi-hydraulic methods, on a solid ledge foundation. It is seven hundred and fifty feet in length on top and two hundred and forty-three feet in height above the riverbed. The top width of the dam, which carries the highway, is fifty feet; the average slopes are one on three upstream and one on three and one-third downstream, making the width of the base about fifteen hundred and ten feet. Both slopes are protected from erosion and wave action by heavy stone riprap. The upstream and downstream embankments are provided with heavy rockfill toes and in addition the downstream toe is reinforced by an arched concrete retaining wall thirty-five feet in height.

In the building of the structure practically all the material was hauled dry from the borrow pits to the dam site, and there mixed in a dissolving box with water which transported it in pipes to the outside edges of the embankments. During construction the outer edges of the dam were kept higher than its center, in which a pool was maintained, so that part of the material was carried by the running water down the slopes known as the beaches, toward

the center of the dam. By this process the coarsest material remains at the outside while the rest is carried inward by the water, gradually sinking as it flows, the coarser first, the medium next, and the finest last in the pool at the center. This last on precipitation forms the practically impervious core, while the coarser material forms the embankments which become more and more pervious toward their surfaces.

In the present dam the core is about two hundred and thirty feet in thickness at its base and forty feet at its top. Two concrete cut-off walls countersunk into the foundation and projecting about three feet into the core material break the joint between the core and the ledge foundation. One of these walls extends across the streambed and up the natural slopes to within some eighteen feet of the top of the dam, while the other extends up the slopes to a height of only about thirty-five feet above the streambed.

No pipes or conduits of any kind pass through or are built into the dam, nor is there any overflow or spillway attached or adjacent to the dam.

From the reservoir extend two tunnels; one on the north side of the stream known as the diversion tunnel, used for drawing down or emptying the reservoir, and the other on the south side known as the pressure tunnel, which conveys water to the Hydro-electric plant located in the river gorge about one and one-half miles below the dam. The diversion tunnel is fifteen hundred and fifty feet in length. It is driven through the mountain from a point about twelve hundred feet upstream from the upstream toe of the dam, and discharges into the streambed well below the downstream toe. Gates etc., are installed therein for controlling the flow. The pressure tunnel, is about seven thousand feet in length. Its head or portal is located almost a half a mile from the dam and is one hundred and fifteen feet lower in elevation than the crest of the spillway.

The spillway of the reservoir is an open channel excavated in the solid rock ledge about one thousand feet from the south end of the dam. The first two hundred feet or thereabouts is lined with concrete while for the remaining length or about five hundred and fifty feet, the floor and side walls of the channel are formed by the solid ledge without any concrete lining. From the crest, which is one hundred and thirty-five feet in width, the channel gradually narrows down in a distance of about two hundred feet, to a width of fifty feet. From this point it continues fifty feet in width to the lower end where it discharges into the streambed about one half mile downstream from the toe of the dam. The crest of the spillway is twenty-eight feet lower than the top of the dam. A single span reinforced concrete highway bridge is built over the spillway channel a short distance below the crest, but it is of such height and design that in no way does it affect the discharging capacity of the spillway.

When the water level is even with the crest of the spillway, the reservoir formed will cover a surface area of about ten hundred and thirty acres and have a capacity of, in round numbers, twenty billions of gallons. Although the dam is practically all in the town of Russell the reservoir lies almost entirely within the town of Blandford.

The level of the reservoir is at present (December 20th.) seventeen feet below the crest of the spillway and the depth of the water at the toe of the dam one hundred and ninety-eight feet. At this level the volume of water impounded is about seventy-five percent of the capacity of the reservoir at the spillway level.

This dam together with the Borden Brook and Intake dams already described, the Sedimentation Reservoir at West Parish and the Provin Mountain distributing reservoir, all have been built by and belong to the City of Springfield Water Works, and are known as the Springfield Water Works Little River system which is carefully looked after by the officers of the Springfield Water Works. It may be mentioned here that this Cobble Mountain Dam is the highest earthen dam in the world.

STRATHMORE PAPER COMPANY DAM (POTASH BROOK DAM).

On Potash Brook, (described under Blandford) about a half mile from its mouth, at a point where the drainage area is six and one-third square miles, is located a dam belonging to the Strathmore Paper Company, Woronoco, Mass.

The dam is a masonry spillway structure of heavy section, about eighty feet in length and twelve feet in height. It is adjacent to the highway leading from Woronoco to Blandford. The pond formed by the structure is small and covers not more than a half acre. It is used as a fire protection for the Strathmore Paper Company Mills below. The dam has been repaired the present year and is in good condition.

HAZZARD POND DAM.

This dam is located at the outlet of Hazzard Pond or Worondake Lake, which is controlled as a storage for the Strathmore Paper Company Mills. Hazzard Pond is located about one and a half miles southwest of Woronoco, on Pond Brook, a tributary of Potash Brook. It covers seventy-one acres and has a drainage area of one and a half square miles or thereabouts.

The dam is an earthen embankment one hundred and thirty-five feet in length and not over five feet in height. The spillway or overflow is located in the center of the structure, is twenty feet in length and built of heavy stone. There is a gate house located in the dam a short distance from the north end of the spillway. From the gate house extends a gated discharge pipe by which the flow from the pond is regulated. The dam is in good condition and it seems that the pond is a natural body of water raised by the dam.

TOWN OF RUSSELL WATER WORKS DAM.

Black Brook rises in the northeast corner of Blandford, flows southeast into Russell where it joins Freeland Brook near Russell Center. It is about three miles in length and has a total drainage area of four and a quarter square miles.

At a point about three-quarters of a mile northwest of Russell Center, where the drainage area contributory is three and three-quarters square miles, is a dam belonging to the town of Russell Water Works.

The dam is a concrete masonry spillway structure about one hundred feet in length and eighteen feet in height. The spillway section is forty feet in length. The dam is laid in a gorge with its foundation on and its ends abutting rock ledge. The pond formed is small and not over one-half of an acre in area. The structure is in good condition.

S O U T H W I C K

There are eleven dams and two natural ponds in Southwick. Of the dams two are on Great Brook, five on tributaries of Great Brook, one at the Congamond Lakes, and three on Sodom Brook. The natural ponds are the Congamond Lakes, and Goose Pond.

CONGAMOND LAKES.

Although the Congamond Lakes have been raised in height above their natural state by a small dam across the outlet into Connecticut, they were previously natural bodies of water almost as large as they are at present, so that they will be considered here as natural ponds.

These Lakes are situated in the southeast part of Southwick, have a drainage area of about four square miles, and cover an area of five hundred and thirty acres.

CONGAMOND LAKES DAM.

At the extreme south end of the Congamond Lakes is a low earthen dam or dike which has raised the lakes and prevented them from draining into Connecticut. It is an earthen structure about sixty feet in length and six feet in maximum height. The dam is ten feet in width on top and has no spillway or overflow. It is in fair condition but its factor of safety, especially against being topped by wave action, could be greatly increased by raising the embankment a couple of feet.

It appears that considerable litigation over the drainage from these lakes occurred in the early seventies between the States of Massachusetts and Connecticut, with the apparent result that the courts sanctioned the building of this dam in its present location. Although the town of Southwick was consulted and some of the oldest inhabitants interviewed, it could not be learned who is the owner of the structure or who is responsible for its maintenance.

These lakes drain into Great Brook, a tributary of the Westfield River, and the outlet into the brook is controlled by a head gate structure.

In their natural state, that is before they were raised, it would seem that the overflow water from these lakes passed from the extreme south end of the lakes, at the site of the present dam or dike, into the State of Connecticut.

GOOSE POND.

Goose Pond is situated about a half mile west of the southerly end of the Congamond Lakes and drains into the State of Connecticut. Its drainage area is about three-quarters of a square mile. The pond proper covers only a few acres but it is surrounded by a swamp of considerable size.

FLETCHER DAM NO. 1.

Great Brook rises in the Congamond Lakes and flows north and northeast through Southwick and Westfield to the Westfield River, into which it empties about a mile upstream from the Westfield-Agawam boundary line. It is eight miles

in length and has a total drainage area of twenty-five and one-third square miles.

At a point about three miles upstream from the Westfield-Southwick boundary line and three-quarters of a mile east of Southwick Center, where the drainage area contributory is twelve and three-quarters square miles, is a dam belonging to W. F. Fletcher, Southwick, Mass. This dam, known as the old powder mill dam, has long since been abandoned. It is now a derelict and forms no pondage.

FLETCHER DAM NO. 2.

About a half mile upstream from the Fletcher dam No. 1, last described, at a point where the drainage area contributory is twelve and one-third square miles, is a second dam belonging to W. F. Fletcher.

This is an earthen embankment one hundred and seventy feet in length and ten feet in height. Its spillway, seventy-three feet in length, is located in the structure toward the south end and built of dry stone masonry backed with earth. The structure is in fair condition and was repaired last year. The pond formed covers about five acres. To this dam is attached a flour and cornmill which are going concerns.

BUZOKI DAM.

Kellogg Brook, a tributary of Great Brook, rises on the north slope of Round Hill at the Southwick-Westfield boundary line, flows southeast and northeast into Westfield, where it joins Great Brook at a point two thousand feet downstream from the Southwick-Westfield boundary line. It is one and a half miles in length and has a total drainage area of about one and a half square miles.

At a point about a mile upstream from its mouth, on property now or formerly belonging to Peter Buzoki, Southwick, Mass., where the drainage area contributory is three-quarters of a square mile, there was years ago a sawmill dam. Only traces of the structure now remain, so that it can be dismissed without further consideration.

ELY DAM.

About five hundred feet upstream and across the highway from the Buzoki dam, at a point where the drainage area contributory is about half a square mile is a small diversion dam built of earth, one hundred and twenty-five feet in length and not over four feet in height. The pondage formed is very small. At one time this dam diverted water through a canal to the old Kellogg tannery which was located about five hundred feet downstream.

SMITH & HASTINGS DAM.

On a tributary of Great Brook from the south, at a point fifteen hundred feet from its mouth, where the drainage area is two and three-quarters square miles, are the remains of the old Smith & Hastings sawmill dam. Both dam and mill have been abandoned for years and now only trace of these structures exist.

CLARK DAM (FORMERLY ROOD DAM).

Upstream about two thousand feet from the Smith & Hastings dam, at a point where the drainage area contributory is about one square mile, is located a dam belonging to Walter E. Clark, Southwick, Mass.

This is an earthen embankment curved in plan, sixty feet in length and about seven feet in height. Its spillway is located in the center of the structure and is seven and a half feet in length with its crest one foot below the top of the dam. Although some repairs were made on this structure a few years ago it is again in poor condition. It needs repairing at both ends of the spillway and at the east end of the embankment. Also, to insure its greater safety, the top of the dam should be raised at least one and a half feet above its present height. These improvements were brought to the attention of the owner at the time of the inspection. The pond formed by the dam covers about two acres.

FARNUM DAM.

Two miles southwest of Southwick Center, on a tributary of Great Brook, at a point where the drainage area is a little over one square mile, is an old sawmill dam which formerly belonged to B. W. Farnum. The dam and mill have been abandoned for years and only traces of both now remain.

PIESCZARKA DAM (FORMERLY LAMBSON DAM).

Sodom Brook rises near the top of Sodom Mountain at the Southwick-Granville boundary line, flows southeast and northeast to Munn Brook, into which it empties at a point about a half mile upstream from the Southwick-Westfield boundary line. Sodom Brook is three miles in length and has a total drainage area contributory of three and a half square miles.

About three-quarters of a mile from its mouth, at a point where the drainage area contributory is about three square miles, is a dam belonging to John Piesczarka, Southwick, Mass. It is a concrete spillway structure of rather light section, forty feet in length and about seven feet in height, built in 1919. From its east end a canal runs a couple of hundred feet to the site of a sawmill and cider mill no longer in existence. The pond formed by the dam is used as a private ice pond and covers about three-quarters of an acre.

The dam is in fair condition except around the spillway and at the south end of the structure where some minor repairs are needed. Should the dam fail however, because of the small pondage, no damage would result from the released water. Previous to a few years this dam belonged to Roy K. Lambson whose family maintained a dam at this place for more than half a century.

DEBONA DAM NO. 1.

Upstream about one and a quarter miles above the Piesczarka dam, last described, at a point where the drainage area contributory is about one-half a square mile, is a dam owned by Prospero Debona, Stafford, Conn. This structure, of which the plans were approved by the county about two years ago, has not yet been fully completed, and consequently no decree of acceptance has been given by the County.

The dam is an earthen embankment four hundred feet or thereabouts in length, fourteen feet in height above the streambed, and contains a plank core. Its top width is ten feet, with slopes of one on three on the upstream side and one on two on the downstream side. The overflow, which is a concrete structure located at the north end of the dam, was never properly finished.

Apparently because of the depression, work on the structure was discontinued before the dam was fully completed. It is expected, however, that the structure will be completed during the coming year. The pond which will be formed when this dam is completed will cover an area of over three acres and have a capacity of about four and one-half millions of gallons.

DEBONA DAM NO. 2 (FORMERLY BATTISTONI DAM).

About seven hundred feet upstream from the last described dam and having practically the same drainage area is a second dam owned by Prospero Debona.

This dam is an earthen embankment faced on the downstream side with heavy stone masonry, eighty-four feet in length and sixteen feet in height. A surface overflow and channel eight feet in width, with its crest about two and a half feet below the top of the embankment, is located at the north end of the structure. The pond formed covers about three acres and is used as an ice and pleasure pond.

The dam is in fair condition except that some gravel fill is needed along the south end of the upstream face to cut off some leakage which shows along the foundation at this place.

S P R I N G F I E L D

In Springfield there are twenty-one dams and ten natural ponds, Ten of the dams are on Mill River and its tributaries; three on Pecowsic brook in Forest Park, one on Van Horn Brook which belongs to the Springfield Park system, one on Lombard Brook, one on Dingle Brook, one on Abbe Brook, one on a tributary of Poor Brook, two on Bircham Bend Brook, and one on the Chicopee River. The latter, namely the Indian Orchard Company dam, is described under Chicopee River Dams.

The natural ponds are Long Pond, Five Mile Pond, Mona Lake, Loon Pond, Soland Pond, Venturers Pond, Bass Pond, Island Pond, and Harmon Pond.

RICHARDS DAM.

Mill River is formed by the union of the north and south branches in the Water Shop Pond. The north branch rises in Mine Mile Pond, so-called, and flows southwesterly and northwesterly through the town of Wilbraham into and through Springfield to Water Shop Pond. The south branch rises on the western slope of Wigwam Hill in Wilbraham flows southwesterly through Wilbraham to East Longmeadow, thence northwesterly and southwesterly through East Longmeadow and Springfield to Water Shop Pond, where it joins the north branch.

Mill River flows southwest from the pond one and a quarter miles to the Connecticut River into which it empties, at a point one and a quarter miles upstream from the Springfield-Longmeadow boundary line. Its total drainage area is thirty-four and a half square miles.

The Richards dam, now entirely gone out, was located about eight hundred feet from the mouth of Mill River, at a point where the drainage area contributory is practically the entire drainage area of the brook. It was a log crib spillway structure about sixty feet in length and six feet in height. The dam furnished power to a cotton waste mill and belonged to Fred J. Richards.

BEMIS & CALL HARDWARE COMPANY DAM.

Upstream about three hundred and fifty feet from the Richards dam, last described, at a point where the drainage area is practically thirty-four and one-half square miles, is a dam belonging to the Bemis & Call Hardware Company, South Main Street, Springfield, Mass.

It is a post deck spillway structure, forty feet in length between abutments and ten feet in height. The foundation is ledge. Along the toe of the dam is laid an apron on top of the ledge in order to prevent erosion of the foundation. The mill is in close proximity to the north end of the dam, from which is laid the penstock to the wheels. Two iron penstocks were formerly laid from the south end of the dam but these have been removed for some time. The pond formed is small. In keeping with the owners policy of maintaining the dam in good condition, repairs were made on the structure during the past summer.

BAY STATE THREAD WORKS DAM.

About two hundred and fifty feet upstream from the Bemis & Call Hardware Co., dam, last described, at a point where the drainage area is thirty-four and one-third square miles, is located a dam belonging to the Bay State Thread Works, Springfield, Mass.

This is a concrete spillway structure sixty-five feet in length between abutments and eleven and a half feet in height. It is laid on rock ledge and was constructed in 1919. The pond formed is small. The dam was repaired during the past summer and is now in good condition.

BALDWIN-DUCKWORTH CHAIN MANUFACTURING COMPANY DAM.

Upstream about one hundred and fifty feet from the Bay State Thread Works dam, last described, where the drainage area is also thirty-four and one-third square miles, is a dam belonging to the Baldwin-Duckworth Chain Manufacturing Company, Springfield, Mass.

This is a wooden post deck structure open on the downstream side and backed with earth on the deck or upstream side. It is fifty feet in length and twelve feet in height. At each end are heavy stone masonry abutments, the south abutment containing the mill headgates.

The dam is not in good condition and needs repairs, especially the planking around the well of the sluice gate. The crest timber which has been torn off for almost two-thirds of its length should be replaced. These repairs were explained to the master mechanic at the time of the inspection. While the pondage formed is small, nevertheless, if suddenly released by failure of the structure, it might do some damage to the dam downstream. The mill attached has been closed down since the chain company moved to a new location a few years ago.

SPRINGFIELD WASTE COMPANY DAM.

About seven hundred feet upstream from Locust Street, at a point where the drainage area contributory is about thirty-four square miles, is a dam belonging to the Springfield Waste Company, Springfield, Mass.

This is a stone masonry spillway structure of the Ogee type, fifty feet in length and about twenty feet in height. At its north end is the bulkhead containing the gates of the penstock leading to the mill, which adjoins the bulkhead. Repairs were made in 1930 on the south abutment where some erosion was in evidence and the dam is now in fair condition. The pond formed by the dam is small.

SPRINGFIELD WEBBING COMPANY DAM.

Upstream about one thousand feet from the Springfield Waste Company dam, at a point where the drainage area contributory is a little less than thirty-four square miles, is located a dam belonging to the Springfield Webbing Company, 235 Mill Street, Springfield, Mass.

It is a stone masonry and concrete spillway structure, the south half being concrete and north half stone masonry. The dam is seventy-five feet in length and twelve feet in height. It is built on ledge, and in 1928 the crest was rebuilt of reinforced concrete.

U. S. ARMORY WATER SHOP DAM.

This dam belongs to the Federal Government and forms Water Shop Pond which has a surface area of three hundred and twenty-eight acres and a drainage area of thirty-three and a half square miles.

The dam is a spillway structure one hundred and six feet in length between abutments and twenty-seven feet in height to the crest of the spillway or thirty feet in height to the top of the abutments. It is built of red sandstone sloped on the upstream side and slightly battered, probably two feet from the perpendicular, on the downstream side. It is laid on ledge and along its toe the ledge is covered with a log apron to protect it from scour or erosion that might in time undermine the toe of the structure. The dam appears to be in good condition, and judging from the measurements obtained relative to its section, it has a generous factor of safety.

PRATT DAM (ANGLERS CLUB DAM).

On the north branch of Mill River about five hundred feet upstream from Parker Street, at a point where the drainage area contributory is ten and a half square miles, is a dam belonging to George D. Pratt, Springfield, Mass.

It is an earthen embankment one hundred and fifty feet or thereabouts in length and about seven feet in height. The spillway or overflow is near the center of the structure and built of concrete and stop planks. It is thirty-six feet in length and has an inclined concrete apron covered with planking.

The structure needs repairs especially the north abutment and the apron, while the stop planking should be replaced. The pond formed is about four acres and is used entirely for fishing purposes.

CITY OF SPRINGFIELD DAM (FORMERLY J. STEVENS ARMS CO. DAM).

This structure is on the south branch of Mill River at the outlet of Mill Pond, so-called, in Sixteen Acres, where the drainage area contributory is nine and a half square miles. It appears that this property was donated to the City of Springfield for Park purposes within a year or so by the J. Stevens Arms Co., the previous owner.

The dam is a dry stone masonry spillway structure fifty feet in length and twelve feet in height laid on a ledge foundation. Some repairs are needed on the structure especially on the crest which needs rebuilding since some of the stones have been dislodged and fallen into the bed of the stream.

The pond is thirty-five acres in area and apparently was a natural pond before the dam was constructed across its outlet. To the structure were attached a sawmill and a grist mill which were destroyed by fire about twenty-five years ago.

ANTONIO GAIMARI DAM.

This is an ice pond dam located east of State Street near St. Michael's Cemetery on a small tributary of Mill River from the north, at a point where the drainage area is a half square mile. It belongs to Antonio Gaimari, 11 William Street, Springfield, Mass., and forms a pond of about two acres.

The dam is an earthen embankment one hundred and sixty-five feet in length, twelve feet in height and from twenty to twenty-five feet wide on top. The overflow is a well located in the pond from which a brick culvert extends through the dam to a point below its toe. The cutting of ice on this pond has been discontinued and the ice house attached to the pond has been razed.

The dam proper is in fair condition but the overflow well and culvert are in poor condition and breaking down in places. In both well and culvert there is an accumulation of debris which obstructs the waterway. If it is not intended to keep the structure in repair the pond should be drawn off.

CITY OF SPRINGFIELD PARK SYSTEM DAMS.

Three of the dams of the Springfield Park System are located in Forest Park near the mouth of Pecowsic Brook (which is described under East Longmeadow) where the drainage area is six and a third square miles, and one on Van Horn Brook which forms the Van Horn Reservoir, formerly a part of the Water Works of the City of Springfield.

These dams are all earthen embankments. It is unnecessary to go into any details about these structures beyond stating that they are in good condition and under the direct supervision of the officials of the City of Springfield Park Department. In addition to these dams there is also the mill pond dam in Sixteen Acres already described above and which was acquired by the Park Department within a year or so.

CITY OF SPRINGFIELD WATER WORKS DAM.

The Lombard Reservoir dam is located at the south end of Kendall Street near the Boston and Albany Railroad and has a drainage area contributory of about a quarter of a square mile.

The dam is one hundred and ninety feet in length and twenty feet in height. The reservoir which it formed covered about one and a half acres and was at one time part of the water supply of the City of Springfield. This supply was discontinued long ago and there has been no reservoir for years. The reservoir basin is at present used as a dumping ground.

HOGAN DAM NO. 1.

On Dingle Brook, which is described under Chicopee relative to the Chicopee Electric Lighting Station dam, at a point about a mile upstream from its mouth or four hundred feet south of Liberty Street, where the drainage area contributory is a third of a square mile, is located an ice pond dam belonging to Peter F. Hogan, Woodmont Street, Springfield, Mass.

It is an earthen embankment one hundred and twenty-five feet in length and ten feet in height. It is fourteen feet in width on top and carries a driveway. The overflow is located in the dam about twenty feet from its south end and is a ten inch vertical pipe connected with a twelve inch pipe laid horizontally through the structure. The pond formed by the dam covers about an acre. Repairs are being made on this dam at the present time and a surface overflow is being added at the east end of the structure.

HOGAN DAM NO. 2. (FORMERLY CHICOPEE WATER WORKS DAM)

Abbe Brook is a tributary from the east of Dingle Brook, into which it empties about two hundred feet downstream from the dam last described. On this brook about eight hundred feet upstream from its mouth, at a point where the drainage area contributory is three-quarters of a square mile, is a second ice pond dam belonging to Peter F. Hogan. This dam formerly belonged to the City of Chicopee (Water Works Dept.) and formed what was known as the Abbe Reservoir which covers about three and a half acres and which was discontinued years ago as a water supply for the City of Chicopee.

The dam is an earthen embankment two hundred and ten feet in length, thirteen feet in height, and twelve feet in width on top. There is a brick gate house located in the pond at the upstream toe of the dam from which is laid through the dam a circular brick waste conduit two feet in diameter. The height of the pond is regulated by stop planks in the gate house. In 1929 on the advice of the County a surface overflow was added to the structure at its north end. The dam is in good condition and the surface overflow has added greatly to the safety of the structure.

STORMS DROP FORGING COMPANY DAM.

In East Springfield on a small tributary of Poor Brook (described under Chicopee) is a small dam belonging to the Storms Drop Forging Co., Cottage Ave., Springfield, Mass. It is located near the shops of the company and has a very small drainage area contributory. The dam is a concrete wall eight inches in thickness faced and backed with earth fill. The overflow, located near the center of the dam, is five feet in length and flanked with concrete wing walls. The structure is fifty-four feet in length and seven feet in height. It is in good condition and forms a small pond used for pleasure purposes and for furnishing water to the company's shops.

FITZGERALD DAM NO. 1.

There are two dams on Bircham Bend Brook, a tributary of Chicopee River, into which it empties from the south at Bircham Bend. The first dam is located about a quarter of a mile upstream from the mouth of the brook where the drainage area contributory is about three-quarters of a square mile, and belongs to Edward Fitzgerald, Indian Orchard, Mass.

This structure is an earthen embankment three hundred feet in length, thirteen feet in height and nine feet in width on top. The overflow, which is one hundred and twenty-five feet from the south end of the structure, is twelve feet in length with its crest five feet below the top of the dam.

The structure has been built over ten years, and is in good condition. It forms a pond of about four acres in area which is leased to the Bircham Fly Club and used only for fishing purposes.

FITZGERALD DAM NO. 2.

About a half mile upstream and across the railroad from the Fitzgerald dam No. 1, last described, at a point where the drainage area contributory is a half square mile, is another dam belonging to Edward Fitzgerald. This structure is an earthen embankment one hundred and sixty feet in length, thirteen feet in height and fourteen feet in width on top. The overflow of the structure is built of concrete at its south end, is ten feet in length, with its crest four feet below the top of the dam.

The dam in general is in fair condition but although it was repaired a few years ago there is still some leakage showing along the toe toward the north end. There are fish screens on the overflow which interfere with its discharging capacity. These screens should be removed and whatever screening is necessary should be arranged so as not to interfere with the efficiency of the overflow. The pond formed is about six acres.

LONG POND.

This is located near the north end of Berkshire Avenue, has a surface area of fifteen acres and a drainage area of not over a quarter of a square mile. It has no visible outlet.

DILWICK POND.

This is located on the east side of Parker Street, just north of the Boston and Albany Railroad. It has a surface area of about six acres; a drainage area of not over one-quarter of a square mile, and no visible outlet.

FIVE MILE POND.

This body of water is located on the north side of Boston Road between Brandon Avenue and Pine Grove Street. It has a surface area of ninety-six acres and a drainage area of about a half square mile. It has no visible outlet.

MONA LAKE.

This is located east of Berkshire Avenue just north of the Boston and Albany Railroad. It has a surface area of twenty-six acres, a drainage area of little more than a quarter of a square mile and no visible outlet.

LOON POND.

This is situated on the north side of Boston Road between Pasco Road and Parker Street. It has a surface area of eighteen acres, a drainage area of less than a half square mile and drains into the north branch of Mill River.

SOLAND POND.

Soland Pond is situated on the west side of Boston Road between Harding and Hodson streets. It has a surface area of two or three acres, a drainage area of not more than a quarter of a square mile and drains into Poor Brook, a tributary of the Chicopee River.

VENTURERS POND.

This is located near the corner of Wilbraham and Plum Tree Roads. It has a surface area of five or six acres, a drainage area of about a half square mile and no visible outlet.

BASS POND.

This is located on the west side of Parker Street about a half mile north of Sixteen Acre Road. It has a surface area of twenty-two acres, a drainage area of about a quarter square mile, and no visible outlet.

ISLAND POND.

This is located south of the Water Shop Pond, adjacent to the Island Pond Road. It has a surface area of nine or ten acres, a drainage area of not more than a quarter of a square mile, and no visible outlet.

HARMON POND.

This is located on the south side of Plum Tree Road about a quarter of a mile from its junction with Allen Street. It has a surface area of five acres and a drainage area of about an eighth of a square mile. There is no visible outlet from it.

T O L L A N D

There are eleven dams and two natural ponds in the town of Tolland. Of the dams, one is on the west branch of the Farmington River, one on Snow Brook, one on Twining Brook, one on Trout Brook, two on Larkin Brook, one on Taylors Brook, two on Hubbard River, and two on Pond Brook. The two natural ponds are Hall Pond and Cranberry Pond.

VERCHOT ESTATE DAM.

The Farmington River rises in the town of Becket and pursues a southerly course through Otis, Tolland and Sandisfield to the Massachusetts-Connecticut boundary line, thence across Connecticut to Windsor, at which point it empties into the Connecticut River. Its total length is seventy-five miles and total drainage area about six hundred square miles. In Massachusetts, its length from its source to the Connecticut line is seventeen miles, and its drainage area one hundred and three square miles.

About five hundred feet upstream from the Massachusetts-Connecticut line, at a point where the drainage area contributory is one hundred and three square miles, is a dam belonging to the J. A. Verchot Estate, Riverton, Connecticut. This is only a diversion dam built of boulders and cobblestone in riprap fashion. It is one hundred and fifty feet in length, not over three feet in height, and is used for diverting water into a canal five hundred feet in length which leads to a cider and sawmill below. Inasmuch as the structure forms no pondage to speak of, no damage caused by released water would result from failure of the structure.

GARIGUE DAM.

Snow Brook is a small tributary of the Farmington River from the west into which it empties about two and a quarter miles downstream from the Tolland-Otis boundary line. About a half mile from its mouth and three miles northwest of Tolland Center, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging now or formerly to W. A. Garigue, Plainfield, New Jersey.

It is an earthen embankment faced downstream with dry stone masonry, two hundred and sixty-five feet in length, nine feet in height, and ten feet in width on its top. It is now a derelict having a free waterway through it. The pond formed by the dam covered about six acres and supplied water at one time to a sawmill. Only traces of the sawmill are now left.

DEEMING DAM NO. 1.

Twining Brook rises on the west slope of Moyer Hill and flows southwest through Tolland into Sandisfield where it joins the west branch of the Farmington River about a mile downstream from New Boston. It is two and a half miles in length and has a total drainage area of two square miles. Upstream about one and three-quarters miles from its mouth, at a point where the drainage area contributory is about one square mile, is a dam belonging to Mrs. Frank R. Deeming, P. O. address, New Boston, Mass.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and nine feet in height. Its spillway or overflow is a sluice-way located at its west end and is six feet in height. The pond formed by the structure is about ten acres. It is known as Twining Pond, and was used some years ago as a storage from which water was drawn through a canal nearly a mile in length to a sawmill located along the highway leading to New Boston. It appears the sawmill which was being run intermittently until a year or so ago is now shut down for good.

The dam is in poor condition and should be repaired if the pond is to be maintained.

DEEMING DAM NO. 2.

Trout Brook is a tributary of Twining Brook into which it empties from the east a few hundred feet east of the highway leading to New Boston. At a point on this tributary about a half a mile upstream from its mouth, where the drainage area is one-tenth of a square mile, is another dam belonging to Mrs. F. B. Deeming.

The structure is a gravel embankment faced up and downstream with dry stone masonry. It is one hundred feet in length, nine feet in height, and ten feet wide on its top. The overflow is at one end of the dam and built of wood. The pond formed by the dam is known as Trout Pond and is about two acres in area. The dam is not in very good condition and should be repaired if the pond is to be maintained.

PALMENBERG DAM NO. 1. (TOLLAND FISH AND GAME CLUB DAM).

Larkin Brook rises in the northeast corner of Colebrook, Connecticut, flows northwesterly into and through Tolland to Slocum Brook into which it empties near the junction of Slocum, Taylors and Cranberry Brooks. It is about one and a quarter miles in length and has a total drainage area of one-half a square mile.

At a point two hundred feet upstream from its mouth, where the drainage area contributory is practically the total drainage area of the stream, is a dam belonging to E. T. Palmenberg, Riverton, Connecticut. It is an earthen embankment faced downstream with stone, eighty feet in length and nine feet in height. The structure is now a derelict with a free water way through it.

PALMENBERG DAM NO. 2.

The second dam on Larkin Brook in Tolland is about fifteen hundred feet upstream from the Palmenberg dam No. 1, last described, at a point where the drainage area contributory is somewhat less than a half square mile and belongs also to E. T. Palmenberg, Riverton, Connecticut.

It is an earthen embankment two hundred and thirty-four feet in length, eight feet in height, and eleven feet wide on top. Its spillway is located seventy-four feet from the south end of the structure and is five and a half feet in length with its crest six inches below the top of the dam. The pond formed by the structure covers about thirty acres and is leased to the Tolland Fishing and Game Club. While the dam is in fair condition, nevertheless, to increase its factor of safety against flood flow topping the structure, the top of the embankment should be raised to a height of at least two feet above the crest of the spillway.

CLARK DAM.

Taylor's Brook rises one mile northwest of Tolland Center and flows south a distance of three miles to its junction with Cranberry Brook, both brooks forming Slocum Brook. Taylor's Brook has a total drainage area of about four square miles.

Upstream three-quarters of a mile from its mouth, at a point where the drainage area contributory is three and a half square miles, was located a sawmill dam on property now or formerly belonging to George Clark, Colebrook, Connecticut. The sawmill was a going concern in the seventies although at present only traces of it and the dam remain.

COOLEY DAM.

On Hubbard River (described under Granville) at a point near the Tolland-Granville boundary line, where the drainage area contributory is nine and a half square miles, are the remains of a dam belonging now or formerly to William Cooley, Granville, Mass.

It was a spillway log diversion dam one hundred and thirty feet in length and seven feet in height, which turned water into a canal leading to the sawmill located about one thousand five hundred feet downstream at a point near the highway. The sawmill was shut down for good years ago and only traces of the dam now remain.

TUNXIS H. F. O. CLUB DAM NO. 1.

A little less than a mile upstream from the Cooley dam, last described, at a point where the drainage area contributory is about six and a half square miles, are the remains of a dam belonging to the Tunxis Hunting, Fishing and Outing Club, Tolland, Mass. This dam was maintained until about ten or twelve years ago when the club removed its central part with dynamite in order to make a free water way through it.

TUNXIS H. F. O. CLUB DAM NO. 2.

Pond Brook rises in Noyes Pond which is situated about two miles northwest of Tolland Center. The brook flows easterly to Hubbard River. It is about one and one-half miles in length and has a total drainage area of three and one-half square miles.

Upstream about three-quarters of a mile from its mouth, at a point where the drainage area contributory is roughly three and one-quarter square miles, is a second dam belonging to the Tunxis Club. This structure is built of field stone masonry faced on the upstream side with gravel supported by a double line of perpendicular planking. It is one hundred and seventy feet in length, eight feet in height, and twelve feet in width on top. The spillway or overflow is located twenty-six feet from its south end and is twenty-one feet in length. This spillway is lined with wood and its crest is twenty inches below the top of the dam. A second overflow four feet in length located near the center of the dam is provided with stop planks for regulating the height of the pond. The dam is in fair condition and the pond formed spreads out as a shallow body of water covering about thirty acres. The pond is used for fishing purposes.

TUNXIS H. F. O. CLUB DAM NO. 3.

Moyes Pond as stated above is situated about two miles northwest of Tolland Center. It is a natural body of water raised by a dam built across its outlet. The drainage area contributory to the pond is about one and a half square miles and the area of the pond one hundred and eighty acres.

The dam across the outlet is built of dry stone masonry and earth. It is two hundred feet in length and seven feet in height. The spillway or overflow is eighteen inches in length and located at the north end of the structure. A second spillway three feet in length is located near the center of the dam. In this spillway movable planks are provided for regulating the height of the pond. Formerly the pond was used as a storage and feeder to the small sawmill pond located downstream. The latter pond and the sawmill went out of existence years ago.

HALL POND.

Hall Pond is situated about two miles northeast of Tolland Center on the headwaters of Hubbard River into which it drains. This is a natural pond which covers about thirty-three acres and has a drainage area contributory of a half square mile.

CRANBERRY POND.

Cranberry Pond is located about one and a half miles southeast of Tolland Center on the headwaters of Cranberry Pond Brook, covers seventeen acres and has a drainage area contributory of a little over a half square mile. There is no dam at its outlet.

W A L E S

In the town of Wales there are thirteen dams, eight of which are on Wales Brook, one on a tributary of Wales Brook, two on Conant Brook, and two on Hollow Brook.

THOMPSON DAM.

Wales Brook rises in the town of Wales about a mile southeast of Wales Pond, flows northwest and north into and through Brimfield, where it joins Mill Brook at a point about three-quarters of a mile southeast of Brimfield Center. It is five and a half miles in length and has a total drainage area of six and a half square miles.

About a half mile upstream from the Wales-Brimfield boundary line or about one and a half miles northeast of Wales Center, at a point where the drainage area contributory is four and a half square miles, was a dam on property now or formerly belonging to Leon H. Thompson, Wales, Mass. It was an old sawmill structure built of earth and abandoned years ago. In its present disintegrated condition it forms no pond, nor does it offer any obstruction to the natural flow of the stream.

H. P. MARCY & COMPANY DAM.

About a half mile upstream from the Thompson dam, at a point where the drainage area contributory is three and a half square miles, is a dam belonging now or formerly to H. P. Marcy & Company, Wales, Mass. This structure was a small diversion dam abandoned years ago. The central part of the structure is gone out and consequently no obstruction is offered to the natural flow of the brook.

WALES WOOLEN MILL DAM.

Upstream two thousand feet from the last described dam, at a point where the drainage area contributory is three square miles, is a dam belonging to the Wales Woollen Company or Raphael Sagalyn, 1321 Main Street, Springfield, Mass.

This is a concrete structure fifty feet in length and twelve feet in height. The spillway is in the middle of the structure and is ten feet in length with its crest three feet below the top of the dam. From the end of the structure there extends upstream, for a distance of sixty feet or thereabouts along the highway, an earthen embankment or dike. The pond formed by the dam is very small. From it is laid a canal that conveys the pond water to the mill below. This water is not used for developing power but for fire protection and process purposes, being first pumped into an artificial reservoir built on the higher ground adjacent to the mill. The dam proper is in fair condition but the embankment or dike needs repairs.

MAPLE VALLEY WOOLEN MILL DAM.

Upstream seven hundred feet above the Wales Woollen Mill dam, last described, at a point in the brook where the drainage area contributory is two and three-quarters square miles, is a dam belonging now or formerly to A. & E. D. Shaw, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth, one hundred feet in length and fourteen feet in height. Part of the structure has gone out making a free water way through it.

DELL MANUFACTURING COMPANY DAM.

On the brook about one thousand feet upstream from the Maple Valley Woolen Mill dam, last described, at a point where the drainage area contributory is a little less than two and three-quarters square miles, is located a dam belonging now or formerly to the Dell Manufacturing Company, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth. It is fifty feet in length, eight feet in height, and carries a driveway on its top. The dam was used as a diversion dam from which a canal was laid about seven hundred feet in length to the woolen mill down stream. The mill was destroyed by fire years ago and never rebuilt. The dam is in fair condition and forms a small pond.

SHAW MANUFACTURING COMPANY DAM.

About five hundred feet upstream from the Dell Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a half square miles, is a dam belonging now or formerly to the Shaw Manufacturing Company, Wales, Mass. It is about one hundred feet in length, fifteen feet in height and carries the highway on its top. At the southeast end of the structure is located the spillway which is built on the downstream side of the highway. It is sixteen feet in length with its crest six feet below the top of the dam or the surface of the highway. The highway is carried over the channel or approach to the spillway by a wooden bridge. The pond formed by the structure is about five acres in area from which a pipe or penstock is laid across the highway and downstream to the woolen mill below which is no longer a going concern.

The dam is in fair condition. The spillway flash boards however are four feet in height. Unless they are arranged to go off automatically in high flood flow these flashboards should be cut down to two feet in height.

NEEDHAM DAM.

On Wales Brook in Wales Center about two thousand feet upstream from the Shaw Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a quarter square miles is located the dam belonging now or formerly to Ernest L. Needham, Wales, Mass. It is an earthen structure faced downstream with dry stone masonry. Its length is sixty feet and its height seven feet with its spillway in the center of the structure. The spillway is thirteen feet in length and planked upstream. There is a sluice way on the south end of the overflow two and a half feet wide and four and a half feet deep.

From the small pond formed by the structure a canal is laid across the highway and connects with the mill downstream. This mill until about sixty years ago was a woolen mill, and since then a sawmill, which in recent years is operated only intermittently. It is the oldest mill in the town, and the building, as it stands today, was constructed in 1828. The dam is over one hundred years old and at present is in need of some repairs. Should the structure fail however, because of the small pondage formed, apparently no damage would result from the released water.

WALES POND DAM.

The eight and last dam on Wales Brook from its mouth is across the outlet of Wales Pond. It appears to be under the supervision of the State or Town authorities, as it forms the foundation or embankment on which the state highway is built. In the pond adjacent to the dam or embankment a spillway and gatehouse are constructed from which a discharge culvert is laid through the highway. In the gatehouse there are stop planks and apparatus for regulating the height of the pond except in times of high water when the pond discharges directly over the spillway into the culvert laid under the highway. This arrangement is a safe one. The dam is in good condition and the pond covers about seventy-seven acres. The pond has a drainage area contributory of one and a half square miles and is a natural body of water raised by the dam.

SQUIRE DAM.

This structure is located about a half mile from Wales Center on the road to Monson across a small tributary to Wales Brook from the west, at a point where the drainage area contributory is less than one-tenth of a square mile and belongs to J. M. Squire, Wales, Mass.

The length of the structure, which is also the highway, is about one hundred and seventy feet and its height six feet. The pond formed covers about three or four acres or probably, with the swamp land around it, six acres, and is used as a fishing pond. The spillway is a well with stop planks arranged therein over which the water flows into the well and through a connecting culvert laid under the highway. This culvert being of rather small section (two feet in width and one foot in height) it is easily blocked by debris etc., and therefore should be kept clean and free at all times. The dam is in fair condition.

NORCROSS DAM (FORMERLY PECK DAM).

At a point on Conant Brook (described under Monson), about a half mile upstream from the Wales-Monson boundary line or three miles southwest of Wales Center where the drainage area contributory is two square miles, is a dam now or formerly belonging to Arthur Norcross Jr., New York.

This is an earthen embankment faced downstream with dry stone masonry. It is one hundred and sixty-five feet in length, twelve feet in height, and seven feet wide on top. The overflow is twelve feet in length with its crest one foot below the top of the dam. The pond formed by the structure is about three acres in area and the water power developed operated, some years ago, a shingle mill and afterwards a cidermill. For the past ten years, however, the cidermill has not been operated and is now closed for good.

Until bought by the present owner, this water privilege had been in the Peck family for over one hundred years and the homestead attached is more than two hundred years old. Since the mill ceased operating, the dam has been allowed to deteriorate so that it is now in poor condition. If it is not intended to repair and restore the structure, it should be breached and a free water way made for the passage of the brook.

BRADLEY DAM.

Upstream about one and a half miles from the Norcross dam, last described, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging now or formerly to Everett E. Bradley, Wales, Mass. It is located at the outlet of Vineca Pond, so-called, which is apparently a natural pond raised by the dam. The dam is an earthen embankment about one hundred and fifty feet in length and five feet in height, faced with dry rubblestone. Because of a breach in the structure, the pond has been lowered to its natural level, and the dam does not interfere with the flow of the brook.

PALMER NATIONAL BANK DAMS (FORMERLY BRAMBLE DAMS).

There are two dams on Hollow Brook, both of which belong now or formerly to the Palmer National Bank, Palmer, Mass. Hollow Brook rises in the town of Wales about one mile southwest of Wales Center, flows northerly through Wales and Brimfield to Charles Brook which it joins to form Mill Brook at a point about a mile southwest of Brimfield. Hollow Brook is four miles in length and has a total drainage area of three and a half square miles. The two dams above mentioned are located in close proximity to each other, at a point about a mile northeast of Wales Center and fifteen hundred feet upstream from the Wales-Brimfield boundary line, where the drainage area contributory is one and a quarter square miles. They were built some years ago to form fishing ponds.

The lower dam is a wooden structure built of logs and planking, one hundred and sixty feet in length and about six feet in height. The dam is apparently abandoned, and the water passes through it without forming any pond.

The other dam, three hundred feet upstream, is an earthen embankment one hundred and thirty feet in length, seven and a half feet in height, and carries a driveway on its top. The overflow is built of cobblestones with a six inch by six inch wood beam laid thereon to form the crest. This dam apparently is also abandoned. It is in poor condition and because of leakage through it, especially around the overflow, backs up only a small pondage. If this dam is to be maintained this leakage should be repaired and the spillway put in better condition.

WESTFIELD

There are twenty-three dams and three natural ponds in Westfield. Of the dams, one is on the Westfield River, namely the Westfield Savings Bank dam, and is described under Westfield River Dams, four are on Westfield Little River, one on Ashley Brook, one on Munn Brook, two on small tributaries of the Westfield Little River, Three on Great Brook, four on Pond Brook, three on Powder Mill Brook, one on a tributary of Powder Mill Brook, one on Moose Meadow Brook, one at the West Parish filter plant, and one on Provin Mountain, the latter being the Provin Mountain Covered Reservoir.

FOSTER MACHINE COMPANY DAM.

On Westfield Little River (described under Russell), at a point about two miles upstream from its mouth where the drainage area is eighty-two square miles, is located the Foster Machine Company dam.

This is a timber crib dam backed with gravel. It is two hundred and ninety-seven feet in length between abutments, slightly less than six feet height above the mud sill, and is aproned downstream. From the bulkhead at the north end of the dam a canal extends to the Foster Machine Company shops about one thousand feet downstream. There is some leakage in the canal near the bulkhead which ought to be repaired. Outside of this the dam is in fair condition for one of its type and age. Because of the low height of the structure, the volume of the pondage formed is not large, and in case of failure of the structure, it does not appear that any material damage would be done by the released water.

CRANE & COMPANY INC. DAM.

Upstream about three thousand feet from the Foster Machine Company dam, last described, is located the second dam on the Westfield Little River at a point where the drainage area contributory is eighty-one square miles. It belongs to Crane & Company, Westfield, Mass.

This is a spillway structure, the greater part of which is stone masonry although a short length at the south end is concrete. The dam is laid on a ledge foundation. It is two hundred feet in length and twenty feet in height, with the crest of the spillway nine and a half feet below the top of the abutments. An earthen embankment extends from the north abutment for a distance of two hundred and eighty feet. At the end of this embankment is located the penstock laid to the mill built along the foot of the embankment.

The structure is in fair condition except at the angle in the dam toward its southerly end where the concrete masonry connects with the stone masonry. There is some disintegration in the joints at this point which should be repaired. The pondage formed by the dam covers thirty-six acres.

STEVENS PAPER MILLS INC. DAM.

Upstream about a mile from the Crane & Company dam, last described, at a point where the drainage area contributory is seventy-eight square miles, is the third dam on the Westfield Little River. It is owned by the Stevens Paper Mills Inc., Westfield, Mass., but formerly belonged to Crane Brothers.

The dam is a stone masonry spillway structure built of hard red sandstone on a ledge foundation. It is one hundred and fifty feet in length and fourteen feet in height, with its spillway six and a half feet below the top of the abutments. The dam was built in 1901 to replace a log dam. It is in good condition, although the concrete wing wall leading downstream from the southerly stone abutment shows considerable erosion, which should be repaired. The pond formed is long and narrow as the structure backs water a considerable distance upstream. Its area is not known and rather large to estimate.

WESTFIELD GREEN MARBLE WORKS COMPANY DAM.

This structure was located on the Westfield Little River at a point about fifteen hundred feet downstream from the Westfield-Russell boundary line, where the drainage area contributory is fifty-two square miles. Inasmuch as the greater part of the structure has gone out, it need not be further considered. The marble works plant still exists but has not been in operation for years.

MOSHER DAM.

A little over a half mile downstream from the site of the Westfield Green Marble Works dam, Westfield Little River is joined by a small tributary from the west. About one-third of a mile from the mouth of this tributary, and on the west side of the highway leading northerly from West Parish so-called, where the drainage area contributory is not over a quarter of a square mile, is a small ice pond dam belonging to Bundage Mosher, R. F. D., Woronoco, Mass.

The dam is an earthen structure one hundred and ten feet in length and six feet in height faced upstream with cobblestones laid in cement mortar. The overflow or spillway five feet in length is built of wood, and located over the streambed near the north end of the dam. The pond formed runs back only about one hundred feet and has an average width of not more than fifty feet. The dam is in fair condition but considering the small size of the pond, should it fail, it is not likely that any material damage would be caused by the released water.

FULLER DAM.

Ashley Brook is a tributary of the Westfield Little River, into which it empties from the south at the upstream end of the pond formed by the Crane & Company dam.

About a mile upstream from its mouth at a point where the drainage area contributory is less than a quarter of a square mile, is a dam belonging to Lewis Fuller, Westfield, Mass. It was built to form an ice pond. The structure failed some fifteen years ago, and as it forms no pond now nor obstructs the natural flow of the brook, it need not be further described.

OSDEN DAM, SO-CALLED.

Munn Brook is formed in the town of Granville at the foot of Sodom Mountain by the union of Dickinson and Tillotson Brooks. It flows southeast and northeast through the towns of Granville and Southwick and empties into the Westfield Little River about a half mile upstream from the Stevens Paper Mills dam. It is four and a half miles in length and has a total drainage area of twenty-one and a half square miles.

Upstream about fifteen hundred feet from its mouth, at a point where the drainage area contributory is practically the total drainage area of the Brook, that is, twenty-one and a half square miles, the Osden dam was located. Inasmuch as only traces of this structure now remain, it need not be further described.

GILLETTE DAM.

On a small tributary which joins the Westfield Little River from the north about eight hundred feet upstream from the Stevens Paper Mill dam is a small ice pond dam belonging to Edgar Gillette, Westfield, Mass. This structure is located about one quarter of a mile upstream from the mouth of the tributary at a point where the drainage area contributory is only about one-tenth of a square mile.

It is an earthen embankment one hundred feet in length, seven feet in height, and seven feet in width on top. The overflow is located at the west end of the dam and is a ten inch pipe built into a concrete bulkhead at its intake end. The pond formed by the dam is small and should the structure fail, apparently no material damage would result from the released water.

SALOOMEY DAM.

About one thousand feet upstream from the mouth of Great Brook (described under Southwick), at a point where the drainage area is twenty-five and a quarter square miles, is a dam belonging to S. Salomey, Westfield, Mass.

It is a post deck spillway structure, the crest of which is ten feet north of the north line of the new bridge crossing the brook at this point. The length of the spillway is fifty-five feet and its height eleven feet above the bed of the brook. The dam is not in very good condition as it shows considerable leakage at the center of the structure along its foundation and between its foundation and crest. If the dam is to be maintained it should be repaired and the leakages stopped.

The pond formed covers about two acres and is now being used as an ice pond. To the structure there were formerly attached a gristmill and a sawmill. These were both destroyed by fire, the gristmill about ten years ago, and the sawmill about a year and a half ago.

UNITED STATES WHIP COMPANY DAM.

Upstream about twelve hundred feet from the Salomey dam, last described, at a point in the brook where the drainage area contributory is twenty-five square miles, is located a dam now or formerly belonging to the United States Whip Company, Westfield, Mass.

This is only a small structure built of loose stone or rip-rap. It is about seventy feet in length and not over four feet in height. It was built as a diversion dam to turn water into a canal that connected with a tannery about one thousand feet downstream. Both tannery and dam were abandoned years ago, and the latter now forms little or no pondage.

LOOMIS DAM.

About a half mile upstream from the U. S. Whip Company dam, last described, at a point where the drainage area contributory is twenty-four square miles was a dam on property belonging now or formerly to Wells Loomis. This structure years ago furnished power to a powder mill although at present hardly a trace of either mill or dam remain.

CUNNINGHAM DAM NO. 1.

Pond Brook rises in Hampton Ponds in the northeast corner of Westfield, flows south and southwest to Powder Mill Brook into which it empties about a mile upstream from the mouth of the latter. Pond Brook is five miles in length and has a total drainage area of eight and a half square miles.

About a quarter of a mile upstream from its mouth at a point where the drainage area contributory is practically eight and one-half square miles, is a dam belonging to William Cunningham, (address Booth & Co., 57 Beekman Street, New York.).

The dam is a dry stone masonry spillway structure thirty feet in length between masonry abutments. Originally this dam formed a sizable pond and the crest of the spillway was thirteen feet in height above the streambed. The spillway was lowered, however, some time ago and is now only six feet above the streambed. At this height the dam forms no pondage and therefore need not be further discussed.

CUNNINGHAM DAM NO. 2.

About three-quarters of a mile upstream from the dam last described, at a point where the drainage area contributory is seven and three-quarters square miles is a second dam belonging to William Cunningham. This is a spillway diversion structure built of stone masonry, twenty-five feet in length, and nine feet in height above the streambed. The crest of the spillway is five feet below the top of the abutments and the pond formed covers about three acres. From the pond extends a canal three thousand feet or thereabouts in length to the headgates of the mill downstream. By this arrangement a high head is developed. The mill which was a paper mill has not been in operation for some years and apparently has been shut down for good.

The dam is not in good condition and needs repairs especially the east abutment downstream from the crest, where the masonry has become ruptured and is falling down.

CUNNINGHAM DAM NO. 3.

The third dam on Pond Brook, also owned by William Cunningham, is located about two miles upstream from the diversion dam last described at a point where the drainage area is a little over four square miles. It forms a storage known as Chapin Pond which covers ten or twelve acres.

The dam is an earthen structure two hundred and twenty feet in length and thirteen feet in height. It is nine feet wide on top and carries a private driveway. The overflow is at its east end and is a canal or channel which extends downstream for some distance. The channel is eight feet in width and its floor, where it passes through the dam, is five feet below the top of the embankment or the floor of the driveway bridge crossing at this point. There is also a ten inch drainpipe gated at the upstream toe, which passes through the

foundation. The structure is in fair condition with the exception of some low places in the top of the embankment which should be filled and levelled up.

CUNNINGHAM DAM NO. 4.

Upstream about three-quarters of a mile from the Chapin Pond dam, last described, and at the outlet of Horse Pond so-called, where the drainage area contributory is about three square miles, is the fourth and last dam on Pond Brook, owned by William Cunningham. Horse Pond is a natural body of water which was raised by the dam in question. It now covers an area of about thirty-four acres.

The dam is an earthen embankment one hundred and thirty feet in length, five feet in height and twenty feet in width on top. The overflow is in the form of a concrete flume one and one-half feet in width and two feet in depth built into the surface of the embankment near its center. The upstream or approach end of the overflow is flared out to a width of four and one-half feet.

The dam is in poor condition especially around the overflow where considerable leakages exist. If the pond is to be maintained at its present level, not only should the structure be substantially repaired but the overflow rebuilt.

These four Cunningham dams last described, which are the only dams on Pond Brook, were formerly owned by the Springdale Paper Company and earlier still by the Jessup and Laflin Paper Company.

FOWLER DAM.

There are three dams on Powder Mill Brook. This brook rises about a mile southeast of Montgomery Center and flows southeasterly a distance of seven and a half miles to the Westfield River, into which it empties a short distance below the mouth of the Westfield Little River. Its total drainage area is twenty square miles.

Upstream about one and a half miles from its mouth, at a point where the drainage area contributory is ten and three-quarters square miles, was a sawmill diversion dam belonging now or formerly to Mrs. James Fowler, Westfield, Mass. The dam was the highway embankment in which the spillway was built with a bridge over it. The height of the spillway was seven feet above the bed of the brook, with its crest four feet below the flooring of the bridge. From its south end a canal extended a couple of hundred feet along the highway and thence under the highway to the sawmill below.

The sawmill was shut down for good a few years ago and the spillway of the dam lowered so that the stream is no longer diverted but flows in its natural course under the bridge.

STANDARD OIL COMPANY DAM (FORMERLY J. C. BUSCHMAN SONS TOBACCO CO. DAM).

About three-quarters of a mile upstream from the Fowler dam, last described, or about three hundred feet west of North Elm Street, at a point where the drainage area contributory is nine and three-quarters square miles, is a dam belonging to the Standard Oil Co., Westfield, Mass.

The dam is an earthen embankment with a stone masonry spillway near its east end. It is three hundred and ninety feet in length and twenty-seven and a half feet in height. The spillway is forty-eight feet in length and twenty feet in height above the stream with its crest seven and a half feet below the top of the embankment. The top four feet of the spillway section is built of logs capped

with planking. Along the toe of the spillway is laid a horizontal wood apron twenty feet in width.

Formerly this dam formed a pond of about eight acres but a few years ago a section of the spillway twenty-seven feet in length was removed to a level of only eight feet above the streambed so that at present there is practically a free waterway through the dam.

ROCKWELL & MOSELEY DAM.

Upstream about three-quarters of a mile from the dam last described, at a point where the drainage area contributory is five and a half square miles, was a dam which at one time belonged to Rockwell and Moseley, Westfield, Mass.

It was an earthen structure two hundred and seventy feet in length and ten feet in height, to which a powder mill was at one time attached. Only a trace of the structure now remains.

TEOMBICK DAM.

On a small tributary of Powder Mill Brook from the west, into which it empties at a point about fifteen hundred feet upstream from the site of the Rockwell & Moseley dam last described, are the remains of a dam on property now or formerly belonging to Andrew Teombick, Westfield, Mass. The dam was located about seven hundred feet from the mouth of the tributary at a point where the drainage area is three-quarters of a square mile. To this structure was once attached a cotton waste mill. Hardly a trace of the dam is now left.

BOISSEAU DAM.

On Moose Meadow Brook (described under Montgomery), at a point about a mile upstream from its mouth, where the drainage area contributory is five and three-quarters square miles, is a dam now or formerly belonging to Joseph Boisseau, Westfield, Mass.

To this structure was attached a sawmill which went out of existence over forty years ago. Afterwards the pond formed by the dam was used as an ice pond until the Spring of 1924 when part of the dam was washed away by a flood flow. Since then the structure has been a derelict having a free waterway through it.

CITY OF SPRINGFIELD WATER WORKS SEDIMENTATION RESERVOIR DAM.

This dam forms a small sedimentation reservoir at the West Parish Filter Plant. The reservoir, which covers an area of about six acres and has a capacity of forty millions of gallons, has practically no natural drainage area but is fed by a tunnel and pipeline from the Springfield Water Works Intake Reservoir on the Westfield Little River.

The dam is an earthen embankment about seven hundred and thirty feet in length and thirty-five feet in height. It has a top width of sixteen feet with slopes of one on two. The upstream slope is surfaced with rock fill and stone paving and the downstream slope is loamed and seeded. In the center of the dam is a clay puddle core, which in turn contains a concrete cut-off wall. Both core and cut-off wall extend to bed rock.

Two forty-two inch steel pipes encased in concrete are laid side by side through the ledge underlying the dam. A surface spillway channel about thirty feet in width and with its crest five feet below the top of the embankment is located in the natural ground at the west end of the dam. This spillway, which seldom if ever comes into use as the flow into the reservoir is controlled by gates, discharges into a small tributary of the Westfield Little River.

The dam is in good condition and is taken care of by the City of Springfield Water Department.

CITY OF SPRINGFIELD WATER WORKS PROVIN MOUNTAIN RESERVOIR.

The Provin Mountain Reservoir is a unit of the Springfield Water Works Westfield Little River Supply. It is an artificial reservoir located on the crest of Provin Mt. about three miles southeast of Westfield Center. Since the crest of the mountain here forms the boundary line between the towns of Westfield and Agawam, the reservoir lies partly in each town. It has no drainage area of its own, but is fed by gravity through a pipeline from the West Parish Filters, and in turn feeds the distribution system through another pipeline leading to the City of Springfield.

It is a roofed concrete structure about two hundred and ninety feet in width, five hundred and forty feet in length, and twenty-six feet in height. As originally built in 1908, the reservoir was only three hundred and twenty feet in length, but in 1931 an addition was constructed at the north end, giving the reservoir a total capacity of about twenty-seven millions of gallons. The walls of the structure are reinforced concrete, of light section, and backed with rock fill embankment. The roof consists of groined plain concrete masonry arches supported by concrete piers spaced from fourteen to sixteen feet apart. The entire roof is covered and protected by a sodded layer of soil two feet in thickness. Inlet and outlet gatehouses are provided in the structure for controlling the flow.

The structure is stable, and is under the care and supervision of the officers of the Springfield Water Department.

NATURAL PONDS.

The three natural ponds in Westfield are the greater part of Hampton Pond, Horse Pond and Buck Pond, all of which are situated in close proximity to each other in the northwest corner of Westfield. Hampton Pond is only separated from Horse Pond by a highway and Horse Pond from Buck Pond by another highway and a narrow stretch of land.

HAMPTON POND.

Hampton Pond covers about one hundred and forty-nine acres and has a total drainage area of two and a quarter square miles. It drains into Horse Pond.

HORSE POND.

Horse Pond covers thirty-four acres and has a total drainage area of about three square miles. It is the source of Pond Brook which discharges into the Westfield River by the way of Powder Mill Brook. Although there is now a

dam at its outlet (see William Cunningham dam No. 4) this pond was formerly a large natural body of water and so is included with the natural ponds.

BUCK POND.

Buck Pond covers twenty acres and has a drainage area of three and a third square miles. It also drains into Horse Pond.

WESTFIELD RIVER DAMS

There are seven dams on the Westfield River, three of which are in West Springfield, one in Westfield, and three in Russell.

The Westfield River is formed in the town of Huntington by the union of its East and Middle Branches about two miles north of Huntington Center, and by its West Branch at Huntington Center; flows southeast through the towns of Russell and Westfield to the Westfield boundary line, thence forms the West Springfield-Agawam boundary line to the Connecticut River into which it empties. The Westfield River is twenty-three miles in length from Huntington Center to its mouth, and has a total drainage area of five hundred and fifteen square miles.

RAMAPOGUE ICE COMPANY DAM.

About a quarter of a mile downstream from Mittineague at a point where the drainage area contributory is five hundred and thirteen square miles is located the first dam from the mouth of the river, belonging now or formerly to the Ramapogue Ice Company.

This is a low timber structure laid diagonally on ledge across the river with the Worthy Paper Mill plant located at its south end, and, until burned down some years ago, the Ramapogue Ice Company plant at its north end. The structure is about five hundred feet in length and not over six or seven feet in height. The dam is in poor condition and is in need of repairs. Because of its low height however, and the fact that there is no other dam downstream, it does not appear that any material damage would result from the released water in case the structure failed.

STRATHMORE PAPER CO. DAM NO. 1. (FORMERLY AM. WRITING PAPER CO. DAM NO. 1.).

In Mittineague, about a half mile upstream from the last described dam, at a point where the drainage area contributory is five hundred and twelve square miles, is a dam belonging to the Strathmore Paper Co., Mittineague, Mass.

This is a sawed timber crib spillway structure laid on ledge, four hundred and fifty feet in length between abutments, eighteen and a half feet in height, and forms a pond which covers twenty acres. The downstream face of the structure is perpendicular, and there is no apron attached. From its north end extends a canal about a half mile in length to the mills located in Mittineague.

The dam is an old one, built some seventy years ago. It was overhauled and extensively repaired a few years ago by the Strathmore Paper Co., and is now in fair condition. The dam and canal originally belonged to the Agawam Canal Company.

STRATHMORE PAPER CO. DAM NO. 2 (FORMERLY AM. WRITING PAPER CO. DAM NO. 2).

About a half mile upstream from the last described dam, at a point where the drainage area contributory is five hundred and eleven square miles, is another dam belonging to the Strathmore Paper Co., which is the third and last dam on the river in West Springfield.

This is another timber spillway structure three hundred and fifty-eight feet in length and seven feet in height. It was built for the purpose of forming a storage to feed the pond next below, the water being fed through the headgates located in the north end of the structure. When in service this dam backed water upstream a distance of about two miles and formed a pond covering about seventy acres. The dam apparently has been abandoned and is a derelict with part of it gone out.

WESTFIELD SAVINGSBANK DAM. (FORMERLY WESTFIELD RIVER REALTY TRUST DAM).

The next dam on the Westfield River is upstream about seven miles from the Strathmore Paper Co. dam last described. It is located just below the Elm Street Bridge near the center of Westfield, where the drainage area contributory is three hundred and sixty-five square miles, and it seems belongs now to the Westfield SavingsBank, Westfield, Mass.

It is a timber spillway structure four hundred and seventy-five feet in length and seven feet in height which is laid on ledge except at and toward its south end where it is laid on piles driven into the sand and gravel foundation. At this end are the headgates from which extend the penstocks to the mill building attached. For a distance of eighty feet from the south end, the dam is provided with an inclined apron. This apron was added in order to protect the penstocks from ice, and the toe of the dam from erosion. The dam is not a very old structure having been built about thirty years ago.

Some repairs are needed on this structure especially around the north abutment, and also in the south or aproned part of the dam where some leakage is showing.

This dam was formerly known as the Horton dam that years ago furnished power to a group of industries including a gristmill, machine shop etc., which were located across the river from the present mill building.

STRATHMORE PAPER CO. DAM NO. 3 (AT WORONOCO).

The next dam upstream on the river is in the town of Russell at the village of Woronoco, where the drainage area contributory is three hundred and fifty-two square miles, and belongs to the Strathmore Paper Company, Woronoco, Mass.

The structure including the forebay from which the penstocks are laid to the power house is four hundred and fifty feet in length and twenty-four feet in maximum height. The dam is irregular in plan, partly curved upstream. One section of it is built of concrete and stone masonry, another of timber crib, and a third of dry stone masonry, the latter sections being backed with concrete and gravel. To the timber crib section is attached a horizontal apron.

The structure is under the supervision of the officers of the Strathmore Paper Company who make repairs thereon when necessary. The dam is in good condition. The pond formed by the structure covers about thirty acres, and there are two paper mills attached; the old or original mill being located on the south bank close to the south end of the dam, and the other, which is comparatively new, is located on the north bank of the river a short distance downstream from the north end of the dam.

WESTFIELD RIVER PAPER COMPANY DAM.

The sixth dam on the Westfield River, upstream about two and one-half miles from the dam last described, is located at the village of Russell where the drainage area contributory is three hundred and forty-two square miles. This dam was built in 1905 by the Otis Fibre Board Company and after several changes of ownership now belongs to the Westfield River Paper Company.

The westerly or main portion of the dam, about one hundred and seventy-six feet in length and twenty feet in maximum height, is a reinforced concrete, hollow, open face structure of the Ambursen patent type. It consists of an inclined reinforced concrete slab deck twelve inches in thickness supported by reinforced concrete buttresses spaced ten feet apart on centers. The whole structure is founded upon the ledge rock which forms the natural bed of the river at this point. The original overflow or rollway section of the dam extended for a distance of one hundred and eight feet from the west abutment to the power house which was built into the dam near its east end.

In 1908 a new power house, forebay, and penstocks were built on the east bank of the river and the top portion of the old power house removed down to within two feet of the level of the overflow. At the same time a low concrete gravity dam also two feet above the crest of the overflow section and not more than five feet in height was constructed from the old easterly abutment a distance of about one hundred and seventy feet to the bulkhead of the new penstocks. These and other changes made since the dam was built have given it a total length not including abutments, of about four hundred and twelve feet. All of this length can act as the spillway in flood flows although ordinarily the water wastes over the original spillway section which has its crest about two feet lower than the top of the remainder of the dam.

The Ambursen type or older portion of the dam shows considerable erosion and disintegration of the concrete composing the deck and buttresses. This disintegration appears mostly on the lower face of the inclined deck, where in some cases it has progressed to such an extent that portions of the steel reinforcing bars are entirely exposed. In addition to this, some of the deck slabs show well defined cracks and other evidences of deformation. Some of the buttresses are considerably eroded and in consequence no longer possess their original stability.

Judging from the condition of the structure as a whole, it is very evident that if this dam is to be maintained substantial and thorough repairs will be necessary in the near future. The pond formed by the dam covers about twenty-three acres.

CHAPIN & GOULD PAPER COMPANY DAM.

The third dam in the town of Russell, seventh on the Westfield River and last on that river in Hampden County, is located about two and a half miles upstream from the Westfield Paper Co. dam last described, near the Hampden-Hampshire County line, at a point where the drainage area contributory is three hundred and twenty-two square miles, and belongs to the Chapin & Gould Paper Company. The mill attached to this structure is known as the Crescent Paper Mill.

The dam is built on the top of a ledge cascade which follows a curve like the letter S. It is a spillway structure built of stone masonry of heavy section, two hundred feet in length and twenty feet in height. The height of the dam together with that of the cascade creates a head or fall of twenty-nine feet. The structure is in good condition and is carefully looked after by the officers of the company.

WEST SPRINGFIELD

In the Town of West Springfield there are sixteen dams. Three of these dams are on the Westfield River, two are on Darby Brook, one on Bagg Brook, four on Wolf Swamp Brook, one on Block Brook, one on a tributary of Block Brook, and four on Black or Bear Hole Brook.

The three dams on the Westfield River, namely the Ramapogue Ice Co. dam, and the two Strathmore Paper Co. dams are described under Westfield River Dams.

FOSSA DAM.

Darby Brook rises in the town of West Springfield near the east end of Oak Court and flows easterly to the Connecticut River into which it empties near the corner of Elm and Riverdale Streets. It is about one and a quarter miles in length and has a total drainage area of three-quarters of a square mile.

About one thousand feet upstream from its mouth near the southerly side of Riverdale Street and the westerly side of Elm Street, at a point where the drainage area contributory is about a half a square mile, is a dam belonging now to Peter Fossa, and formerly to Harrison Loomis.

The dam is an earthen embankment two hundred and fifty feet in length and eleven feet in height. Its overflow consists of two pipes through the structure; one of which is controlled by a gate, and the other by stop planks to regulate the height of the pond. The dam is in fair condition and the pond formed thereby covers about an acre and a half. To increase the factor of safety of the dam a permanent surface spillway of adequate capacity should be added thereto. At one time a gristmill and a sawmill were attached to the dam. Recently there was attached an ice cream plant, which it now appears has been shut down for good.

WEST SPRINGFIELD WATER WORKS DAM (PIPER RES. DAM).

Upstream about a half mile from the Fossa dam last described, at Piper Street where the drainage area contributory is about a half square mile, is a reservoir dam belonging to the Town of West Springfield Water Works.

This dam was built in 1875 by a private company to supply water to the inhabitants of the Town of West Springfield. In the early nineties the entire water system, including the reservoir and dam, was taken over from the private company by the town and has been municipal property ever since.

The dam is an earthen embankment which carries the Piper Road, so-called, on its top. It is about three hundred and thirty-five feet in length, fourteen feet in height and thirty-eight feet in width on top. At or near the toe of the embankment there is a gatehouse from which a sixteen inch supply pipe and a twelve inch waste pipe extend through the foundation of the dam. This latter or twelve inch pipe extends vertically in the gatehouse to the surface of the reservoir, discharges a short distance below the downstream toe of the dam, and constitutes the only overflow attached to the reservoir.

This twelve inch spillway pipe proved sufficient to control all flood flows from the reservoir for over fifty years and until the phenomenal rainfall which occurred on this drainage area in the middle of June of the present year. At that time a practically continuous rainfall established a new record of 6.8 inches for a two day period in this vicinity. During the height of the flood

the water in the reservoir topped the dam and crossed the macadam surface of the highway thereon, washing out the downstream newly built shoulder of the road and undermining the macadam somewhat. Although the depth of the water crossing the crown of the roadway was only one and five-eighth inches at the maximum point, nevertheless, this comparatively thin sheet of water caused considerable damage in a short space of time.

It may not be amiss here to state that some years ago the spillway pipe was raised fourteen inches in height, which resulted in less freeboard; and also the drainage area was increased by diversion into the reservoir of surface water from catch basins etc.,

Since the flood of the present year was the first which the spillway pipe failed to discharge safely in its fifty-seven years of service, the question can be asked to what extent the changed conditions, especially the raising of the pipe and lessening of the freeboard, contributed to the topping of the dam and the resulting washout.

In view of what has happened, it is recommended that a surface overflow be added to the reservoir. This could be built, at a reasonable cost, in the form of a culvert under the roadway at the south end of the dam.

KNEIP DAM.

Bagg Brook rises in West Springfield on the southeast slope of Prospect Hill, and flows southeasterly a distance of two miles to the Connecticut River into which it empties a half mile upstream from the mouth of Darby Brook. Its total drainage area is two square miles.

About three-quarters of a mile upstream from its mouth, in the triangle formed by Piper Road, Morgan Road, and Cayenne Street, where the drainage area contributory is one square mile, is located a dam belonging now or formerly to Frank Kneip, 53 Cayenne Street, West Springfield, Mass. The dam is a small concrete structure which when in good condition formed a shallow ice pond one-third of an acre in area. It is now abandoned, a derelict, and forms no pond.

BAGG DAM:

There are four dams on Wolf Swamp Brook, which is a tributary of Bagg Brook from the south, and into which it empties about a quarter of a mile upstream from the mouth of Bagg Brook. The first dam on Wolf Swamp Brook is about one thousand feet upstream from its mouth and on the west side of the roadway passing near the dam, at a point where the drainage area contributory is three-quarters of a square mile. It belongs to Mrs. Aaron Bagg, Riverdale, West Springfield, Massachusetts.

The dam is an earthen embankment two hundred and sixty feet in length, and fifteen feet in height, faced upstream with a concrete wall. The over-flow is located sixty feet from its north end and is a concrete well having stop planks fashioned therein for regulating the height of the pond. The width of the stop planks is five feet and their height three and a half feet. From the bottom of the well is laid through the dam a twenty-six inch drain pipe; and from the top, a culvert five feet wide and three feet high. The dam is in fair condition and the pond formed thereby covers about ten acres.

LYNCOSKY DAM.

The second dam on Wolf Swamp Brook is about a half mile upstream from the dam last described, at a point where the drainage area contributory is somewhat less than one half a square mile, and belongs to Felix Lyncosky, 573 Piper Road, West Springfield, Mass.

The dam is an earthen embankment faced with concrete, about one hundred and twenty feet in length, five and a half feet in height, and eight feet wide on top. The pond formed by the structure covers about a half acre and is an ice pond. The dam is in poor condition but because of the small capacity and location of the pond, no material damage would be done by the released water if the dam should fail.

SPRINGFIELD ICE COMPANY DAM.

The third dam on Wolf Swamp Brook is located about five hundred feet upstream from the Lyncosky dam, last described, at a point where the drainage area contributory is about one-third of a square mile, and belongs to the Springfield Ice Company, Alden Street, Springfield, Mass.

This is an earthen embankment one hundred and forty feet in length, seven feet in height, and eight feet wide on top. Its spillway is at the west end, and is five feet in width with its crest two feet below the top of the dam. The pond formed by the structure is three and a half acres in area and is used as an ice pond. The dam is in good condition except the overflow, which requires some repairs.

DROBAT DAM.

Upstream about two thousand feet from the last described dam and at the headwaters of Wolf Swamp Brook, where the drainage area contributory is not over one-quarter of a square mile, is an ice pond dam belonging to Joseph Drobat, Morgan Road, West Springfield, Mass.

The dam is an earthen embankment four hundred feet in length and five feet in height. This dam requires some repairs, but the pond formed is so small that in case the structure failed, no damage would result from the released water.

HENRY BROTHERS DAM.

This structure is located on the headwaters of Block Brook about four hundred feet north of Dewey Street, at a point where the drainage area contributory is not more than a half square mile, and belongs to A. & S. Henry, Elm Street, West Springfield, Mass.

The dam is an earthen embankment one hundred and fourteen feet in length, and eight feet in height. It is faced on the upstream side with dry stone and on the downstream side with a concrete wall fourteen inches in thickness. The spillway is in the middle of the structure and built of concrete. It is six feet in length with its crest one foot below the top of the dam.

The dam, which was in poor condition, is now being repaired. Inasmuch however as the pond formed is of small capacity, it appears that failure of the structure would not cause any material damage.

FARNSWORTH DAM.

On a small tributary which enters Block Brook from the north immediately above the Henry dam last described, is located a small ice pond dam belonging to C. D. Farnsworth. This dam is about one half a mile upstream from the mouth of the tributary and fifty feet north of the public highway, at a point where the drainage area contributory is about one-tenth of a square mile.

The dam is an earthen embankment about forty feet in length and seven feet in height, faced on the downstream side with stone. In the middle of the dam there is a plank spillway ten feet in length with its crest two feet below the top of the dam. The pond formed covers only about one-third of an acre, and is of such small capacity that even if it were suddenly released by the failure of the dam no material damage would be done.

WEST SPRINGFIELD WATER WORKS DAM NO. 1.

There are four municipal dams on Black Brook, or as it is sometimes called Bear Hole Brook, in the town of West Springfield. Black Brook is the outlet of Ashley Reservoir, a part of the water supply of the City of Holyoke, from which it flows south through West Springfield to the Westfield River, into which it empties about a half mile downstream from the West Springfield-Westfield boundaryline. The brook is four and a half miles in length from its outlet at Ashley Reservoir to its mouth, and has a drainage area of six and three-quarters square miles, including the three square miles contributory to Ashley Reservoir.

The first dam on Black Brook is about one and three-quarters miles upstream from its mouth, at a point a short distance above the West Springfield Water Works pumping station, where the drainage area contributory is five and one-half square miles. This is an earthen embankment two hundred and seventy-five feet in length, twenty-five feet in height and twelve feet in width on top. The overflow is at its west end and is thirty feet in length with its crest five feet below the top of the dam. This channel was extended in the past year to a point forty feet below the toe. The pond formed by the structure covers about six acres.

WEST SPRINGFIELD WATER WORKS DAM NO. 2.

About a half mile upstream from the last described dam, at a point where the drainage area is five and one-third square miles, is located another dam belonging to the West Springfield Water Works. This is an earthen embankment faced up and downstream with masonry walls laid on a ledge foundation. It is ninety-six feet in length and twenty-one feet in height. The spillway is a channel through the dam six feet in width and with its crest six feet below the top of the embankment. Over the spillway is a bridge which carries a driveway. The reservoir formed is not over two acres in area.

If the dam is to be maintained it should be repaired, especially the downstream wall which is being undermined by erosion of the ledge on which it is built. This erosion should be checked by a concrete apron or otherwise, and the wall pointed and put in good condition.

WEST SPRINGFIELD WATER WORKS DAM NO. 3.

Upstream from the last described dam about one and a quarter miles, at a point where the drainage area contributory is about three and three-quarters square miles, is another dam belonging to the West Springfield Water Works. This structure is located on Black Brook within about one-third of a mile of the West Springfield-Holyoke boundary line, and about three-quarters of a mile downstream from the City of Holyoke Ashley Reservoir.

The dam is an earthen embankment one hundred feet in length and nine feet in height. The spillway is located at its east end, is twenty-five feet in length and built of concrete. It discharges the waste water into a channel that extends beyond the toe of the embankment. The pond formed is about two acres in area. The dam, which is apparently abandoned, was purchased by the West Springfield Water Works only for the protection of the watershed.

WEST SPRINGFIELD WATER WORKS DAM NO. 4.

The last or fourth dam belonging to the West Springfield Water Works on Black Brook is located about fifteen hundred feet upstream from the last described dam, and within one hundred and fifty feet or thereabouts of the West Springfield-Holyoke boundary line, at a point where the drainage area contributory is less than three and one-third square miles. This structure which stands at the top of a cascade, is built of dry stone masonry forty feet in length and eight feet in height. This dam, to which there was connected a gristmill and a sawmill years ago, is now abandoned and was also purchased by the West Springfield Water Department only for the protection of the watershed. There is hardly any pond formed.

The above four dams, being owned by the Town of West Springfield Water Department, are of course under the constant care and supervision of the officers of that department.

W I L B R A H A M

There are seven dams and two natural ponds in the town of Wilbraham. Of the dams, two are on the Chicopee River and are described under Chicopee River Dams, one on Twelve Mile Brook, one on a tributary of Twelve Mile Brook, one on Calkins Brook, one on the south branch of Mill River, and one on a tributary of the south branch of Mill River.

COLLINS MFG. CO. DAM. (FORMERLY GATES DAM NO. 1).

This dam is located on Twelve Mile Brook (described under Monson) at a point about a half mile upstream from its mouth, at Ellis Mills, so-called, where the drainage area contributory is about fourteen square miles, and belongs to the Collins Mfg. Co. North Wilbraham, Mass., who purchased this property and made substantial repairs on the dam in 1927.

The dam is a dry stone masonry structure backed with earth three hundred and thirty feet in length, sixteen feet in height, and ten feet in width on top. It is curved in plan, concave upstream, and the spillway, which is fifty feet in length (seven feet of which is a stop plank arrangement), is located at the south end of the structure. Toward its north end there is a valve chamber built in the dam from which a gated pipe is laid to the company's paper mill.

In the repairing of the dam in 1927 the crest of the spillway was left at its original height but the top of the embankment was raised two feet so as to increase the free board from three to five feet. The dam is in good condition and the pond formed thereby covers about five acres.

GATES ESTATE DAM.

Calkins Brook (described under Monson) joins Twelve Mile Brook at Ellis Mills. At a point near its mouth where the drainage area contributory is practically the total drainage area of the brook, namely three and a quarter square miles, is located a dam now or formerly belonging to the Leroy H. Gates Estate.

It is a dry stone masonry spillway structure backed with earth, one hundred feet in length and about six feet in height. This structure is now a derelict having a free waterway through it.

GREEN DAM.

This dam is located about a mile southeast of North Wilbraham on a small tributary from the south which joins Twelve Mile Brook a few hundred feet above the mouth of the latter.

The dam is in close proximity to the highway which crosses the brook about a half mile upstream from its mouth, and has a drainage area contributory of not more than one-half a square mile. It consists of a concrete wall on the upstream face backed with earth and rock fill, forming an embankment about seventy feet in length, fifteen feet in height, and twenty feet in width on top. The surface overflow or spillway is five feet in length.

The dam forms an ice pond covering about one-eighth of an acre and is owned by Oliver L. Green, North Wilbraham, Mass. The structure is in good condition, but should it fail no material damage would be done by the small pondage released.

BERGERON DAM (FORMERLY GURTON DAM).

On the south branch of Mill River (described under Springfield), at a point about two miles southwest of Wilbraham Center and one and a half miles upstream from the Wilbraham-East Longmeadow boundary line, where the drainage area contributory is two and three-quarters square miles, are the remains of a dam belonging to Alphonse Bergeron, address Springfield P. O., R. F. D. No. 2.

The structure formed Stebbin's Pond, so-called, and had a sawmill attached which went out of existence about thirty years ago. Only traces of the structure now remain.

POWERS DAM.

Upstream about a mile and a quarter from the Bergeron dam, last described, and on the brook which entered the south end of Stebbin's Pond, is a dam belonging to James F. Powers, Wilbraham, Mass. This dam is located about two miles south of Wilbraham Center at a point in the brook where the drainage area is less than one quarter of a square mile.

The dam is an earthen structure, faced upstream by an eighteen inch concrete wall. It is about one hundred and seventy feet in length and eighteen feet in height. The overflow is built of concrete four feet in length and one and one-half feet in depth, countersunk into the top of the embankment near its center.

The embankment is in fair condition, but the concrete facing wall and the downstream end of the overflow show some disintegration. The condition of these parts of the structure was drawn to the attention of the owner at the time of inspection. The pond formed covers about an acre and is used as an ice pond.

NATURAL PONDS.

The two natural ponds are Spectacle and Nine Mile Ponds, both of which are located in the northern part of the town of Wilbraham with one on each side of the Boston Road near North Wilbraham Center. Spectacle Pond has a surface area of twenty acres, a drainage area of a quarter of a square mile, and no visible outlet. Nine Mile Pond has a surface area of thirty-six acres, a drainage area of a quarter of a square mile and discharges into the north branch of Mill River.

CONCLUSION

It may be stated here that, as far as is known, all the dams and also the natural ponds of any size are included in this report, which has been prepared with the intention of making it a complete and ready reference.

During the entire work of inspection endeavor was made to have the owner or a representative of the owner present during the examination of each dam, especially in the case of the structures which showed the need of attention. This policy was adopted so that any necessary repairs or changes could be fully explained on the ground to the party having charge of the dam.

Many of the older dams, having been built with little or no scientific knowledge but rather by rule-of-thumb methods, would not, if strictly analyzed, measure up to the requirements of modern standards. It is in these cases particularly that careful judgment rather than science must be exercised in reaching a conclusion as to the stability of a structure. Such judgment must extend not only to the condition of the dam but also to the risk involved.

A perusal of this report will not fail to impress the reader with the large number of abandoned dams and those which formerly furnished power to small industries but which are now maintained only to form ponds used for recreational purposes. An explanation of the changes which caused these dams to relinquish the parts they once played in the industrial life of the county cannot be better given than by reiterating what was said on this subject in the 1925 report.

The existence of these abandoned and converted dams indicates, to a great extent, the changes in economic conditions within the last couple of generations, especially when it is realized that not much over a half a century ago practically all of these structures were in use, each one with an industry attached to it and evidently responding to a certain economic demand for its existence.

Such a change may be attributed to a number of factors, foremost among which must be the gradual shifting of population from the country to the city, the increased facilities of transportation, the development of new industries, particularly electric power, radical changes in industry because of new inventions and the increasing centralization of industry with its necessary maximum production in certain centers.

The knowledge that most of the old time sawmills are passing reflects the loss of timber in the resources of the county and encroachment of the portable sawmill. The fact that the gristmills, for years important in every community, and the small factories, at one time centers of activity, are being abandoned, is mute evidence of modern development, ruthless in some instances but beneficial in some of its larger phases.

It is also interesting in this regard to note that the ice pond dams, which but a few years ago were increasing in number, are now one by

one being abandoned as natural ice is replaced by artificial ice and electric refrigeration. It may be that in the future ice pond dams in service will be as rare as are gristmill dams in service at present.

In conclusion it may be stated that some idea of the great responsibility of the county for the safety of the dams within its boundaries may be obtained from the realization that its jurisdiction extends over dams of practically all types and sizes, from a small structure forming only a small pond to the highest earthen dam in the world.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1933 Tighe Report



1933 Reports

Report filed December 27, 1933 by James L. Tighe with respect to recommended repairs in his report of 1932.

Dam Hampden County

dz 5 076

REPORT
HAMPDEN COUNTY DAMS
1933

TIGHE & BOND
CONSULTING ENGINEERS
189 High Street, Holyoke, Mass.

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 790

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 27, 1933.

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. the Board of County Commissioners,
Hampden County,
Springfield,
Massachusetts.

Thomas J. Costello, Chairman.

Dear Sir:

In regard to the condition of the dams of Hampden County, I beg to report that these structures, found to need repairs in the general inspection made in 1932 and about which the owners were notified by the County Commissioners, had been followed up by your engineer. This consisted in advising the owners on the field as to the repairs and alterations that were necessary for greater safety, and in seeing that the work was done.

The names of these dams, including the towns in which they are located, are given in the following table. Further particulars in regard to their type, length, height and other details can be found in the report "Hampden County Dams 1932."

T A B L E

Agawam Company (woolen mill) dam.....	Agawam
Springfield Ice Company dam.....	"

Ralp P. Anderson dam.....	Brimfield
Brimfield Brick Company No. 3 or upper dam.....	"
Lowell Wilcox dam (flashboards removed).....	"

Ernest L. Alderman dam.....	Chester
Adra L. Day dam.....	"

Ames Sword Company dam.....	Chicopee
John H. Ash dam.....	"
Chicopee Mfg. Co. Hearthstone Quarry brook dam..	"
Hampden Bleachery dam.....	"
Lucien Lemieux dam.....	"
J. Stevens Arms Company dam.....	"
John Wyszatycki No. 2 dam.....	"

Noble & Cooley Drum Shop middle dam.....	Granville
--	-----------

Margaret Driscoll dam.....	Hampden
Harry Goodwill dam.....	"
E. E. Stalker dam.....	"

James E. Rorabaugh dam.....	Holland
-----------------------------	---------

Lewis Cote Jr. dam.....	Holyoke
-------------------------	---------

Club Realty Company dam overflow channel.....	Longmeadow
---	------------

Alden Brothers dam.....	Ludlow
Elmer H. Carver dam.....	"
Anthony Kowalzik dam.....	"

Bumstead Estate dam.....	Monson
Monson State Hospital No. 2 dam.....	"
Edgar Squire dam.....	"

David Tindal dam.....	Montgomery
-----------------------	------------

Central Mass. Electric Company dam.....	Palmer
Hermas La Bossiere dam.....	"
Palmer Fire Dist. No. 1 dam overflow channel....	"
Palmer Town Farm dam.....	"

Westfield Paper Compsny dam (under repairs).....	Russell
--	---------

Walter E. Clark dam.....	Southwick
--------------------------	-----------

Anglers Club dam (flashboards removed).....	Springfield
Edward Fitzgerald No. 1 dam.....	"
Peter F. Hogan No. 1 dam.....	"
Peter F. Hogan No. 2 dam.....	"

Jennie S. Deeming No. 1 dam.....	Tolland
T. C. Palemberg dam.....	"
Tunxis H. F. O. Club No. 2 dam.....	"

Shaw Mfg. Company dam (flashboards removed).....	Wales
--	-------

Crane & Company Inc. dam.....	Westfield
Quinnetuck Co. (formerly Westfield S. Bank dam).	"
S. Salomey dam.....	"
City of Westfield W. W. Montgomery Intake dam...	"

Henry Brothers dam.....	West Springfield
Felix Lynscooky dam.....	" "
Springfield Ice Company dam.....	" "
West Springfield Water Works Bear Hole dam.....	" "
West Springfield W. W. Piper res. New overflow..	" "
Worthy Paper Company dam.....	" "

James F. Powers dam.....	Wilbraham
--------------------------	-----------

The above table shows that there were two dams repaired in the town of agawam; three in Brimfield; two in Chester; seven in Chicopee; one in Granville; three in Hampden; one in Holland; one in Holyoke; one in Longmeadow; three in Ludlow; one in Montgomery; three in Monson; four in Palmer; one in Russell; one in Southwick; four in Springfield; three in Tolland; one in Wales; four in Westfield; six in West Springfield and one in Wilbraham.

The Order issued by the County Commissioners to the owners of the Bemis ice pond dam so-called, in Chicopee, to draw down the water in the pond to the level of the roadway in Front Street located just below the dam, has not as yet been complied with.

This dam has been kept under constant surveillance and

one of the owners of the property, who lives adjacent to the structure, had his attention drawn to the matter several times since the order was issued.

To draw down the pond to the level of the roadway in Front Street, will necessitate the lowering of the brick well overflow seven feet. Inasmuch as this work has not been done by the owners before now, it appears, as if it may have to be done by the County under Section 47 & 48 of Chapter 253 of the General Laws.

The emergency overflow discharge ditch, excavated around the east end of the dam, has not been re-filled and should be kept open until the dam is made safe.

Some of the dams which the owners were notified to put in repair are being abandoned instead. Such are those that, because of economic changes or conditions, have gradually gone out of service and that there is no likelihood of their ever being put into service again. For instance the Birmingham dams, connected with the Springdale Paper Co. Mill in Westfield, have not been in use for some time and are now being abandoned and in the derelict class, so to speak. These dams are on Pond brook, the outlet of Hampden Ponds. Moreover the paper mill, has not only been discontinued, but the mill buildings are being razed at the present time.

Other dams that have been abandoned and allowed to become derelicts, are the Norcross dam and the Palmer National Bank No. 1 and No. 2 dams in Wales (formerly the Bramble dams);

the Duckworth Chain Co. dam and the Gaimari dams in Springfield and the Desmarais dam in Chicopee. The latter, which was an ice pond earthen structure built mostly of sandy material, has practically all gone out.

The high flood flow in the Chicopee brook in Monson, caused by the unusual heavy rainfall of over six inches on the morning of Sept. 16th last and night before, carried away the wooden forebay and penstock leading from the west end of the Moulton dam to the wheel flume of the saw-mill adjacent. No damage was caused down stream by the collapse of those appurtenances. The Moulton dam is 90 feet in length and 10 feet in height. It is built of dry stone masonry backed with earth, and forms only a small pondage.

After this storm in September all the dams in active service and those whose failure might cause damage down stream, were inspected.

The surface overflow, recommended by the County to be added to the West Springfield Water Works Piper Reservoir dam and, for which plans were approved by the County in June last, has been built. This overflow, because of its ample capacity of discharge, removes any danger in the future to the dam from high water in the reservoir.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1934 Tighe Report



1934 Reports

Report filed December 31, 1934 by James L. Tighe. Total number of dams inspected was 242. Descriptive matter in this report was taken freely from the original report compiled in 1932.

Dam Hampden County

REPORT
HARPER COUNTY DAMS
1934

MEMBER

AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER

CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 790

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER

BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 31, 1934

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. The Board of County Commissioners
Hampden County
Springfield, Massachusetts

Thomas J. Costello, Chairman,

Dear Sir:

In compliance with your instructions and in pursuance of the provisions of Chapter 253 of the General Laws and amendments thereto which state that "the County Commissioners shall, as often as once in two years, cause a thorough examination to be made of every reservoir, reservoir dam and mill dam by the breaking of which loss of life or damage to a road or bridge is likely to be caused, etc.". I beg to state that I have made such an examination the present year and submit the following report thereon.

The number of dams forming ponds which were examined is two hundred and forty-two (242). These dams are located in the different cities and towns of the County as follows:

Agawam.....	10	Monson.....	34
Blandford.....	6	Montgomery.....	4
Brimfield.....	11	Palmer.....	20
Chester.....	7	Russell.....	8
Chicopee.....	26	Southwick.....	5
East Longmeadow...	1	Springfield.....	18
Granville.....	10	Tolland.....	7
Hampden.....	12	Wales.....	5
Holland.....	5	Westfield.....	14
Holyoke.....	12	West Springfield..	13
Longmeadow.....	2	Wilbraham.....	5
Ludlow.....	9		

The above list does not include the abandoned dams, derelicts, so called which have free water-ways

through them and form no pondage at present. These structures however were visited during the examination in order to ascertain if any of them were being restored. In order to have a record of them they were described in detail in the report filed with the County in 1932 entitled "Report Hampden County Dams 1932". Inasmuch as all the dams in the above list, with the exception of a few small structures, are described in the 1932 report, including locations, drainage area contributory, type of structures dimensions, ownership etc., it was thought not necessary to describe them again in this report.

AGAWAM

The ten (10) dams in Agawam are in fair condition, some minor repairs however are needed on the Springfield Ice Co. dam, on the upstream end of the south wing wall and on both concrete walls of the spillway channel. These walls are showing some erosion of the concrete which should be repaired and stopped before the erosion becomes more material.

While repairs had been made on the Agawam Woolen Co. dam last year further repairs have been made on it this year, so that it is now in good condition. Repairs have also been made on the Paul Korse upper dam and lower dams. The north end of the latter, which had been subject to washouts from run-off down the hill side in rain storms, has been protected by the digging of a swale to catch and divert the run-off from the end of the dam.

The Agawam Sportmen's Club dam, which was abandoned some years ago, has not been put into use since and henceforth can be considered a derelict. The Theodore Smith dam, listed as the last of the dams under Agawam in the 1932 report and which as stated therein needed repairing, has been breached instead, and has now a free water-way through it.

Some repairs needed on the Bonomi dam located at Hubbard corners, so called, were at the time of the inspection explained to the owner, who gave the matter his attention.

BLANDFORD

The six (6) dams in Blandford are in fair condition with the exception of the G. F. Fowler Estate dam and the Charles A. Brown dam. Both of these structures, for want of repairs, can be considered derelicts. The former backs up hardly any water and the latter, which is located on one of the feeders of Cobble Mt. reservoir, at a point about a half mile from the reservoir, has, it appears, been purchased by the City of Springfield Water Works and will, it is expected, be breached and the pond permanently drawn down.

The repairs recommended by the County on the storage reservoir dam of the Huntington Fire District in September last, have been completed and the dam is now in good condition.

While the Huntington Fire District is in Hampshire County, the dam is located just across the Hampshire-Hampden County line, in a remote and almost inaccessible corner of the Town of Blandford, on Cold Brook, so called, which flows down the side of the mountain to the Westfield River.

BRIMFIELD

The eleven (11) dams in Brimfield are in fair condition with the exception of the Brimfield Brick Co. dam No. 3.

As shown in the 1932 report the Brimfield Brick Co. owns three dams located on Blodgett Brook in the vicinity of the company's brick yard. Dam No. 1, which is a sawmill structure, was repaired during the year. Dam No. 3, which is located about two thousand (2000) feet upstream from dam No. 1, needs repairing of its south end concrete abutment wall on the pond side, and also, of the sluiceway leading from the pond, the timbering of which is falling in. It is expected that these repairs will be made the coming year.

At the time of inspection an accumulation of debris was interfering somewhat with the discharge of the spillway in the W. B. Cheney dam. This debris

was removed by the owner after his attention was drawn to the matter.

During the year a small swimming pool dam was constructed of loose cobble stone faced with earth by Ralf P. Anderson on Elbow Brook at a point a few hundred feet downstream from his old dam. Although it is of a rather temporary makeshift construction, nevertheless, it is mentioned here as a matter of record.

The attention of the executors of the F. F. Isaacs Estate was drawn to the condition of the bridge over the spillway of the dam located on Elbow Brook and owned by the late Mr. Isaacs. This bridge had collapsed and the broken ends dropped on to the crest of the spillway, thus interfering with the discharge over the spillway.

CHESTER

Of the seven (7) dams in Chester repairs have been made during the year on the Ernest L. Alderman dam and on the Adra L. Day dam. The old Steinhart dam located within the Village of Chester is gradually going out by attrition and backs up hardly any water at present.

The Hamilton Emery & Corundum Co. dam needs repairs. From its west end for a distance of thirty-five (35) feet the crest is sagged, and at and towards its east end there is considerable leakage. Attention of the superintendent of the Company was drawn to the condition of the structure. It seems there is a possibility that the Company might breach the dam instead of making further outlays to maintain it. Since the structure is only about six (6) feet in height and forms only a small pondage, its collapse would not cause any material damage from released water.

The Chester Fire District No. 1 Water Supply stone masonry reservoir dam, while stable in its present condition, needs some repairs in the way of pointing up joints etc. The attention of the District has already been drawn to the matter.

CHICOPEE

The twenty-six (26) dams in Chicopee including the six (6) on the Chicopee River are, with a few exceptions, in fair condition.

Of those on the Chicopee River repairs have been made during the year on the east abutment of the Chicopee Mfg. Co. dam No. 2 and on the downstream brick facing of the Bircham Bend dam which has been pointed with cement mortar.

The Dana S. Courtney dam, the first from the mouth of the River, is in poor condition and has not been in service for sometime. Likewise the Chicopee Mfg. Co. dam No. 1 has not been in service for sometime and apparently is abandoned, since the wheel house at the east end of the structure has been dismantled, taken down and the flume taken out.

Dams on the smaller streams that have been repaired are the two ice pond dams in Willimansett belonging to John Wyszatycki, the Chicopee Mfg. Co. water supply reservoir dam and the Louis Slate ice pond dam near Chicopee Falls. The repairs on the latter structure are not completed.

Dams on the smaller streams that need repairing are the Chicopee Mfg. Co. concrete dam on Hearthstone Quarry Brook and the ice pond dam belonging to Lucien Lamieux. The spillway of the latter and the spillway-channel of the former need attention.

The F. X. Desmarais ice pond dam located on Hearthstone Quarry Brook, at a point about a quarter of a mile upstream from the Chicopee Mfg. Co. dam, is now a derelict with a free water-way through it. Only traces of this structure now remain.

In April 1933, the County notified the owner of the Ashe Ice pond dam, that the structure, because of its poor condition, should be substantially repaired or else the pond drawn down and a free channel opened for the passage of the brook. Since then, the dam has been breached and the pond no longer exists. This condition removes a source of worry, especially to the owners of property downstream.

The order issued by the County to the owners

of the Bemis ice pond dam, so called, relative to the lowering of the spillway, has not been complied with as yet. Because of this the dam is kept under surveillance and the emergency discharge ditch excavated around the east end of the dam, will be kept open and not re-filled until the spillway is lowered as ordered.

EAST LONGMEADOW

The only dam in this town is the Smith ice pond dam, so called, located on Pecowsic Brook. It is a derelict and has formed no pondage for years. Formerly it developed power to run a grist and saw mill which were then known as the Taylor mills.

GRANVILLE

The ten (10) dams in Granville are in fair condition. The repairs and strengthening of the Noble & Cooley Drum Shop dam no. 2, advised by the County, were not made any too soon, as the very exceptional heavy rainstorm which occurred on September 17th-18th last in that territory, tested the safety of the structure to its limit. The pond formed by the Drum Shop dam No. 1, on which the highway is carried, overflowed and the water crossed the highway and caused a washout on its downstream side. The overflowing of the pond was caused by the flashboards, usually put on in the summer and low water season, not being removed before the occurrence of the storm.

During the year in the late Summer and early Fall the City of Westfield Water Works built three small dams for forest fire protection on its Granville water shed. These dams are located on Hollister Brook, a feeder of the Granville Storage reservoir, on the sites of old saw mill dams, two of which had long since gone out of service and of which hardly a trace remained.

The first of these dams is built about a mile and a quarter upstream from the storage reservoir dam, or about one thousand (1000) feet westerly of the old Stage Coach Highway between Granville Corners and the City of Westfield and adjacent to the Wildcat Road, so called. It is a masonry spillway structure backed with earth one hundred and twenty (120) feet in length along

its top and twelve (12) feet in height above the streambed or eight (8) feet to the crest of the spillway. The drainage area contributory thereto is about one and a half square miles and the capacity of the pondage formed thereby is in the neighborhood of one-quarter of a million of gallons.

About two thousand (2000) feet farther upstream is located the second dam. This is also a masonry spillway structure backed with earth. It is eighty-five (85) feet in length and seventeen (17) feet in height above the streambed or thirteen and a half ($13\frac{1}{2}$) feet to the crest of the spillway. The drainage area contributory is approximately one and one-quarter square miles and the capacity of the pond formed is less than a half a million of gallons.

The third dam is located about a mile and a half upstream from the second or last mentioned dam on the head waters of the brook at a point where the drainage area contributory is not over a half square mile. At this site the old earthen dam which was still in place was overhauled and put in good condition by adding material to the embankment, increasing the discharging capacity of the spillway and rip-rapping or paving the upstream face of the embankment with stone laid in cement. The dam however, is a rather small structure being only eighty (80) feet in length and four (4) feet in height. The pondage formed is also very small and less than a quarter of a million of gallons.

Notwithstanding that these dams have been built to impound water for forest fire protection purposes, it appears the first two, at least, are under the jurisdiction of the County.

HAMPDEN

With the Driscoll, Goodwin and Stalker dams having been repaired the twelve (12) dams in Hampden are in fair condition. The Smith dam which had been in the derelict class for sometime, has gone out and, as it appears, will not be rebuilt.

HOLLAND

The three (3) dams in Holland, including the large storage reservoir dam of the Hamilton Woolen Co., are in fair condition. Some minor repairs have been made on the G. H. Wing dam and on the James E. Rorabaugh dam. Mr. Rorabaugh has started the construction of another fish pond dam at a point across the highway and about five hundred (500) feet down stream from his present dam. Judging from the foundation and the work already done, it is going to be an earthen embankment faced with a cobble stone masonry wall. Its length apparently will be around two hundred (200) feet and its height, as far as could be ascertained, between nine (9) and ten (10) feet above the streambed. If less than ten (10) feet in height the structure can be built without a permit from the County as it will be outside the legal requirements, since the pondage formed thereby, will be less than a million of gallons and the water shed is less than a square mile.

HOLYOKE

With the exception of the V. Carpentier ice pond dam which requires some minor repairs, and the Holyoke City Farm ice pond dam which is apparently out of service for all time, the twelve (12) dams in Holyoke are in fair condition. Of these dams eight (8) belong to the City of Holyoke, one (1) to the Holyoke Water Power Co., being that built across the Connecticut River at Holyoke, and one (1) to the State of Massachusetts, being that which forms Bray Lake in the State Reservation.

This latter dam is in need of some repairs on the concrete walls of the spillway channel. Both of these walls are breaking up and leaning in towards the channel. They should be repaired and strengthened.

LONGMEADOW

There are only two (2) active dams in Longmeadow, the Club Realty Co. dam, known as the Longmeadow Country Club dam, and the Kriener dam, known also as the Turners Park dam. Both of these structures are in good condition. The spillway channel of the

former however, needs some repairing, and a swale or surface overflow should be added to the latter, in order to increase its factor of safety in high water. The overflow or spillway of the dam at present is a stop plank well from which an 18 inch pipe is laid through the dam. The discharge, therefore, from the pond is limited to the discharging capacity of this pipe which might be inadequate at a time of exceptionally high flood discharge water. Hence a surface overflow is recommended.

The fish pond dam belonging to H. L. Handy, which failed in 1932, has not been rebuilt.

LUDLOW

The nine (9) dams in Ludlow including the Ludlow Associates dams No. 1 and No. 2 across the Chicopee River, and the Springfield Water Works storage reservoir dam, are in fair condition.

During the year repairs were made on the Samuel Block dam, the Zelinski dam, which was formerly the Warren D. Fuller dam, and the Kowalzik dam. To increase the factor of safety of the latter in high water, a surface overflow in the form of a swale, should be added to the structure. This was pointed out to the owner on the day the dam was inspected.

MONSON

In Monson there are thirty-four (34) dams which is the largest number in any town or city in the County. With the exception of a half dozen requiring repairs they are on the whole in fair condition. Those requiring repairs are the Sullivan dam, the Sun-Up Lamp Works dam, the Remington dam, the Bradway upper dam, the Eaton dam and one of the dams at the Monson State Hospital.

The repairs needed on the Sullivan dam are the resetting in place of a few face stones that fell out of the south end of the structure. In the Remington dam at a point south of the south end of the spillway there

is some leakage through the structure that should be stopped. An attempt was made some time ago to stop this leakage but it was not successful. The leakage however was lessened. Although the owner of the Bradway dam was notified that the structure was in poor condition, especially the spillway, no repairs have been made on the structure as yet.

In regard to the Eaton dam, the overflow, which is a swale located at the north end of the dam, should be widened and deepened or else the top of the dam embankment raised. The Sun-Up Lamp Works dam proper, is in fair condition except that the horizontal apron attached to its downstream toe needs to be rebuilt or at least replanked in full. In the State Hospital ice pond dam No. 1 it appeared as if some of the gravel-fill between the masonry upstream and downstream facings of the structure was washed out by a flood flow. This gravel-fill should be replaced.

While inspecting the two dams at the State Hospital a third one was discovered on the grounds of the institution. It is located about twelve hundred (1200) feet upstream from dam No. 1 and is a concrete structure eighty-five (85) feet in length and seven (7) feet in height. It is in poor condition, does not form any pondage and can be considered a derelict.

The forebay part and penstock of the W. C. Moulton dam on the Chicopee Brook which, as stated in the 1933 report to the Board, were swept away by the high flood flow of Sept. 16th last year, have since been rebuilt and the dam put in good condition.

MONTGOMERY

The four (4) dams in Montgomery are in fair condition. Three (3) of these belong to the City of Westfield Water Works and the fourth, which is an ice pond dam, to David Tindall of Montgomery. The Dean dam, which formed a pleasure pond, is no longer in active use and is now a derelict.

PALMER

With the exception of the two (2) small water supply storage dams supplying water to the village of Thorndike and the Thompson Lake dam, so called, the twenty (20) dams in Palmer, including the Otis dam across the Chicopee River, are in fair condition. Regarding

the Thorndike Water Supply storage dams only minor repairs are needed to put both structures in good condition. At the Thompson Lake dam the concrete overflow channel or swale of this structure, leading from the spillway crest downstream across the top of the dam, shows some erosion and disintegration which should be repaired. The owner, Dino Luppi, was notified about this condition last year but, so far, has paid no attention to the matter. Mr. Luppi formerly lived in Springfield but, it appears, he has not been living there for some time. An effort was made to find him by making inquiries in Springfield and also of the assessors and tax collector in Palmer, but without success.

Repairs were made during the year on the La Bossiere ice pond dam as advised by the County. Repairs were also made on the Palmer Welfare ice pond dam which was practically rebuilt.

RUSSELL

The eight (8) dams in Russell, including the City of Springfield Water Works Cobble Mt. dam and the Little River Intake dam, also including the Strathmore Paper Co. dam, the Westfield River Paper Co. dam and the Chapin and Gould Paper Co. dam across the Westfield River, are in fair condition with the exception of the Westfield River Paper Co. dam. The Westfield River Paper Co. dam is located at Russell village. Some repairs were made on this structure during the past couple of years by the Company but there is considerably more repair work to be done on it before the dam is brought to its original or nearly its original stability. As far as could be learned at the time of the inspection, it is the intention of the Company to continue the repairs in the summer season in low water until all the necessary repair work is completed.

SOUTHWICK

Of the five (5) dams in Southwick four (4) are in fair condition and one (1) needs repairs. This is the Walter E. Clarke ice pond dam which, for want of attention for some time past, may now be considered

a derelict. Because, however, of the small pond formed by the structure no damage would result from the released water even in case of sudden collapse of the structure.

The Prospero Debona dam No. 1 located on Sodom Brook and referred to in "Report Hampden County Dams 1932" has not as yet been completed. The plans and specifications for its construction were approved by the County in 1930. The exceptionally heavy rain storm already referred to which occurred on September 17th last, caused a bad washout in the unfinished spillway or overflow.

SPRINGFIELD

The eighteen (18) dams in Springfield, including the Indian Orchard Co. dam across the Chicopee River, are in fair condition. A few of them however require some attention such as the Forest Park No. 2 and No. 3 structures, which show some erosion in the concrete piers of the former and in the concrete culvert of the latter along the water line. Likewise the erosion showing in the upstream part of the south abutment and wing wall of the Bay State Thread Works dam, the poor condition of the log apron of the Armory dam, the obstructions in the swale at the north end of the Hogan dam No. 2 (formerly Chicopee Water Works dam) and the rather small capacity of the emergency overflow added to the Fitzgerald dam No. 2 on Bircham Bend Brook, should all receive attention.

It appears the George D. Pratt dam (Anglers Club dam) has been abandoned as the stop planks etc., in the spillway have been removed and the pond drawn down.

The Baldwin - Duckworth Chain Mfg. Co. timber dam located on Mill River about one hundred and fifty (150) feet upstream from the Bay State Thread Works dam has, it appears, also been abandoned. If not intended to put this structure again into use it should be taken down and removed from the stream in order that no damage may be done downstream by floating timbers in flood flows. Repairs have been made during the year on the Bemis & Call Co. dam. This structure has not been used for developing power for some time, nevertheless, the company is keeping it in repair.

TOLLAND

The seven (7) dams in Tolland are in fair condition. During the year repairs were made on the Deeming dam No. 1, the Tunxis Club dam No. 2 and the R. P. & H. W. Ward dam (formerly the W. A. Garigues dam) which is located on Snow Brook, a tributary of the Farmington River. This dam was overhauled and a great part of it rebuilt the past summer. The plans and specifications for the doing of the work, were approved by the County on July 25th, 1934. The work was done in accordance with the plans and specifications and in a satisfactory manner. The dam is now a safe structure and more stable, it appears, than it has ever been before.

WALES

The five (5) dams in Wales are in fair condition. The flash boards on the Shaw pond dam, as advised by the County, have been lowered and a greater clearance given for the discharge of flood water between the top of the flash boards and the flooring of the highway bridge located over the dam.

No repairs have been made on the Arthur Norcross Jr. dam (formerly the Peck dam) located on Conant Brook, and the structure, which is very much dilapidated, can be considered henceforth a derelict.

WESTFIELD

The fourteen (14) dams in Westfield including the Quinnetuck dam (formerly the Westfield River Realty Trust dam) across the Westfield River at Westfield, are in the main in fair condition. The Quinnetuck dam has been repaired and the apron at its south end overhauled. Some repairs, however, have yet to be made on its north abutment.

The before mentioned exceptionally heavy rain storm which occurred on Sept. 17th-18th caused a washout in an abandoned ice pond sand dam belonging to Louis Fuller of Westfield.

This dam is located on the head waters of Simmons Brook, so called, at a point where the drainage area contributory is less than three quarters of a square mile. It is an embankment built mostly of sand faced upstream with a concrete wall. Its length is two hundred and thirty (230) feet and height above the streambed seven (7) feet or four (4) feet to the crest of the spillway which is located in the dam eighty (80) feet from its north end. Beyond some erosion downstream along the edges of the brook and the dislocating of a water pipe laid across the brook, no damage was done by the washout. According to the owner the structure is not going to be repaired and will not form any pondage in future.

On Pond Brook which rises in Hampton Ponds, there are four dams belonging now to William Cunningham, 241 West Chester Ave., Mount Vernon, New York, and that formerly belonged to the Springdale Paper Co. The storage and pondage formed by these structures were in connection with the furnishing of process water and power to the Springdale Paper Co's. mill. This mill is not now in existence. It had not been in use for some years and the buildings were completely razed in 1933.

WEST SPRINGFIELD

The thirteen (13) dams in West Springfield, in which are included the Strathmore Paper Co. dam and the Ramapogue Ice Co. dam across the Westfield River, are in fair condition. Of the four (4) municipal dams belonging to the West Springfield Water Works on Black or Bear Hole Brook, so called the fourth or the one nearest the Ashley reservoir in Holyoke has been breached and a free water-way made through it. A free water-way has also been made through dam No. 2 known always as Bear Hole dam, by the construction of a large culvert through the dam.

There was a washout in the ice pond dam belonging to C. D. Farnsworth. This structure is a rather small one being only forty (40) feet in length and seven (7) feet in height. It is located on a tributary of Block Brook, about a half mile from its mouth, and upstream fifty feet from the Public Highway leading to Holyoke via. Ashley reservoir. No damage was done to the highway or to anything else by the washout and the dam has been repaired. In making the repairs the

crest of the spillway was lowered to a height of only about three (3) feet above the streambed.

Some repairs were made on the Felix Lyncosky ice pond dam but more are needed before the structure has a proper margin of safety.

WILBRAHAM

The five (5) dams in Wilbraham, including the Ludlow Mfg. Associates Red. Bridge dam and the Collins Mfg. Co. dam both of which are on the Chicopee River, are in fair condition. Part of the plank apron of the latter is worn out and should be renewed. Repairs have been made during the year on the James F. Powers ice pond dam which was in poor condition.

CONCLUSION

In conclusion it may be stated that a number of the dams received a preliminary examination prior to the general examination. Such dams were those that might cause material damage by their failure and which it was thought advisable to examine after the breaking up of the Winter and the passing of the Spring freshets.

In the general examination the condition of each dam was explained on the grounds to the owner, if within reach. By doing this many defects were corrected at a small expense which if allowed to run would become more material and therefore more costly to correct.

It is interesting to note that, many of the ice pond dams have been and are being abandoned and allowed to go without attention. This condition can be accounted for only by the increased use of manufactured ice and electrical refrigeration. As many of these ice ponds are recently producing little or no income it is quite a problem convincing the owners to expend money to keep the dams in repair or even to breach the dams so as to allow a free water-way through them.

The month of September last had several torrential rainstorms which severely tested many of the dams, especially those on the smaller streams. In the Granville - Southwick district the rainfall for September was over twelve and one-half ($12\frac{1}{2}$) inches, nearly half of which fell in the storm before referred to on the 17th and 18th and caused considerable damage to roads, bridges and dams.

In due time a list of the dams which require attention, with a description of the repairs needed and the names and addresses of the owners, will be prepared and filed with the Board.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1935 Tighe Report



1935 Reports

Report filed December 31, 1935 by James L. Tighe with respect to recommended repairs in his report of 1934.

Dam Hampden County

d25 078

REPORT
HAMPDEN COUNTY DAMS
1935

Filed, December 31, 1935

JAMES L. TIGHE
CONSULTING ENGINEER
189 High Street, Holyoke, Mass.

REPORT
HAMPDEN COUNTY DAMS
1935

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 31, 1935

The Hon. The Board of County Commissioners,
Hampden County
Springfield, Massachusetts

Thomas J. Costello, Chairman:

Dear Sir:

During the year all the dams forming ponds throughout the County were inspected in regard to their safety. With the exception of a small per centage of them that need some repairs, they were found to be in fair condition.

Following the usual procedure, where a dam was found in need of repairs, its condition was explained on the ground to the owner, if within reach, and besides, a formal notice was prepared and sent to him by the County, stating the condition of his structure and the repairs that should be made if the pond be maintained.

DAMS REPAIRED

Within the year repairs were made on the Thompson Lake dam located in the town of Palmer. It may be remembered that the owner of this structure, who formerly lived at 84 Saratoga Street in Springfield, could not be located anywhere and that the repairs were eventually made by the owners of properties bordering the lake, in accordance with the plans and specifications prepared by the engineer for the County under whose direct supervision the work was done. The dam is now a safe structure.

Other dams repaired were the Bonomi dam in Agawam, the Wilcox dam in Brimfield, the Hamilton Emery and Corundum Co. dam in Chester, the Lemieux dam in Chicopee, the Wing dam in Holland, the Kowalzik dam and the Alden dam in Ludlow, the Eaton dam in Monson, the LaBossiere dam in Palmer and the Powers dam in Wilbraham.

BRIMFIELD BRICK CO. DAM.

The Brimfield Brick Co. Inc. who was notified by the County that its dam, located in West Brimfield, needed repairs had, instead of making these repairs, drawn down the pond, which will not be filled again until the repairs are made.

VETERANS PARK DAM IN LUDLOW

During the summer months a small earthen dam having a concrete core, was built on a tributary of Harris brook in Ludlow near Ludlow Center. The structure is 156 feet in length, 6 feet in height above the streambed and 32 feet in width on top, over which a roadway is carried. The spillway is located near the center of the dam and is a stop plank construction 4 feet in width, which discharges into a 4 foot by 4 foot concrete culvert laid through the dam. The pond formed is a shallow body of water covering about eight acres. The project was an Emergency Relief Administration one and developed as an embellishment to the park.

SAMUEL BLOCK DAM IN LUDLOW

After operating the waste or drain pipe gate of the Samuel Block dam in Ludlow, in the drawing down and refilling the pond, a washout occurred along the drain pipe, making a free water-way through the dam and thus emptying the pond. The washout occurred on June 30th last and the dam has not been repaired since.

AGAWAM RIVER JETTY

The stone Jetty, designed to prevent soil erosion of the northerly bank of the Agawam River along

the Eastern States Exposition grounds in West Springfield had been completed during the year by the town of West Springfield, in accordance with the plans and specifications prepared by and under the supervision of the engineer for the County.

EXTENSION OF WILLIMANSETT BROOK CULVERTS
IN WILLIMANSETT

The extension down-stream of the two Willimansett brook culverts laid through the property of the Hampden Brewery Co. in Willimansett and for which the plans were approved by the County on December 4th, 1935 is now in course of construction and will be completed within a short time.

Respectfully submitted

James L. Tighe

Hampden County Dams 1936 Tighe Report



1936 Reports

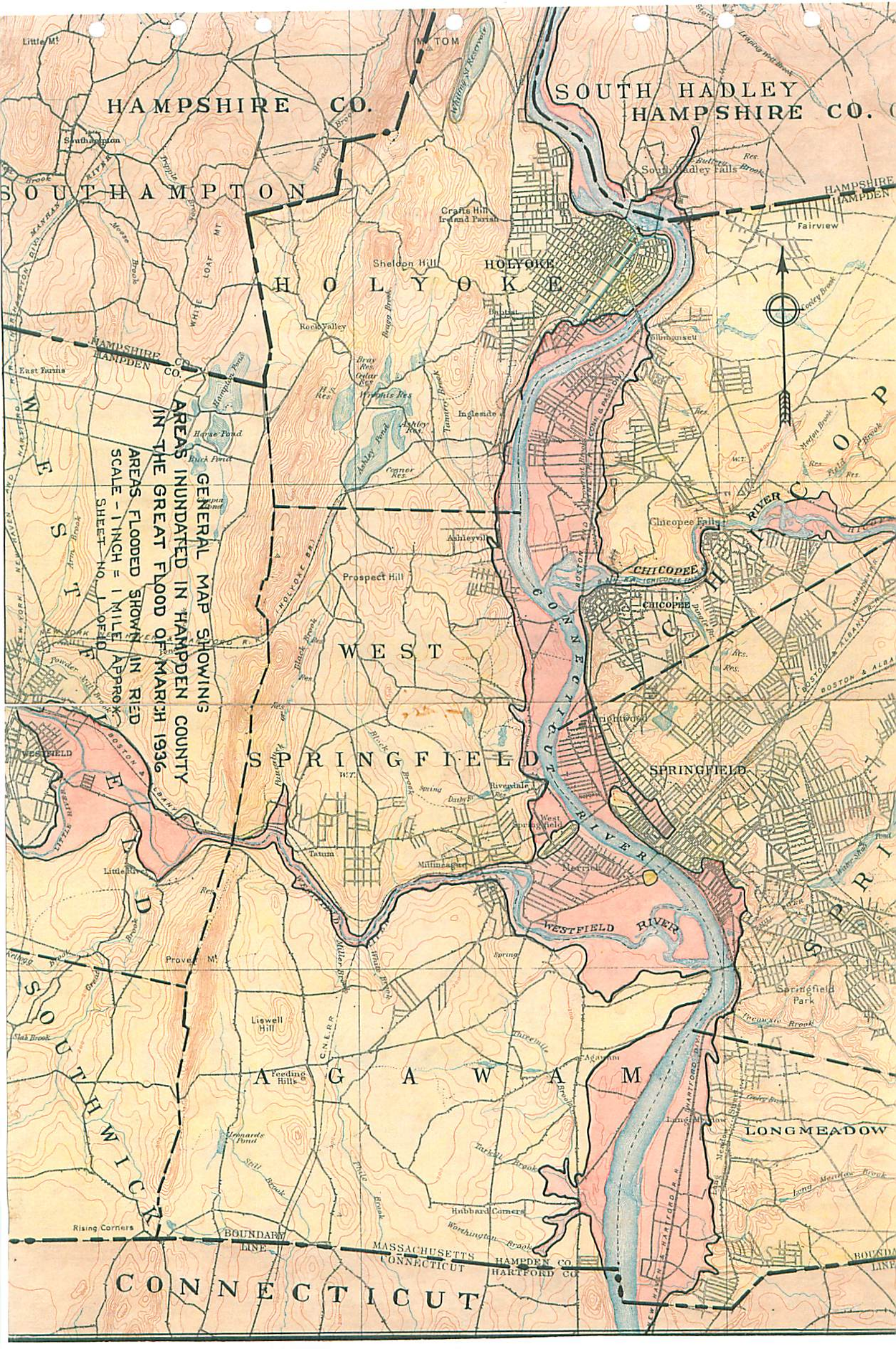
The "Great Flood of 1936" - report filed by James L. Tighe on January 2, 1937. Inspection of Dams. The worst flood in the history of Hampden County, the Connecticut River Valley and the whole of New England occurred during the week of March 15, 1936.

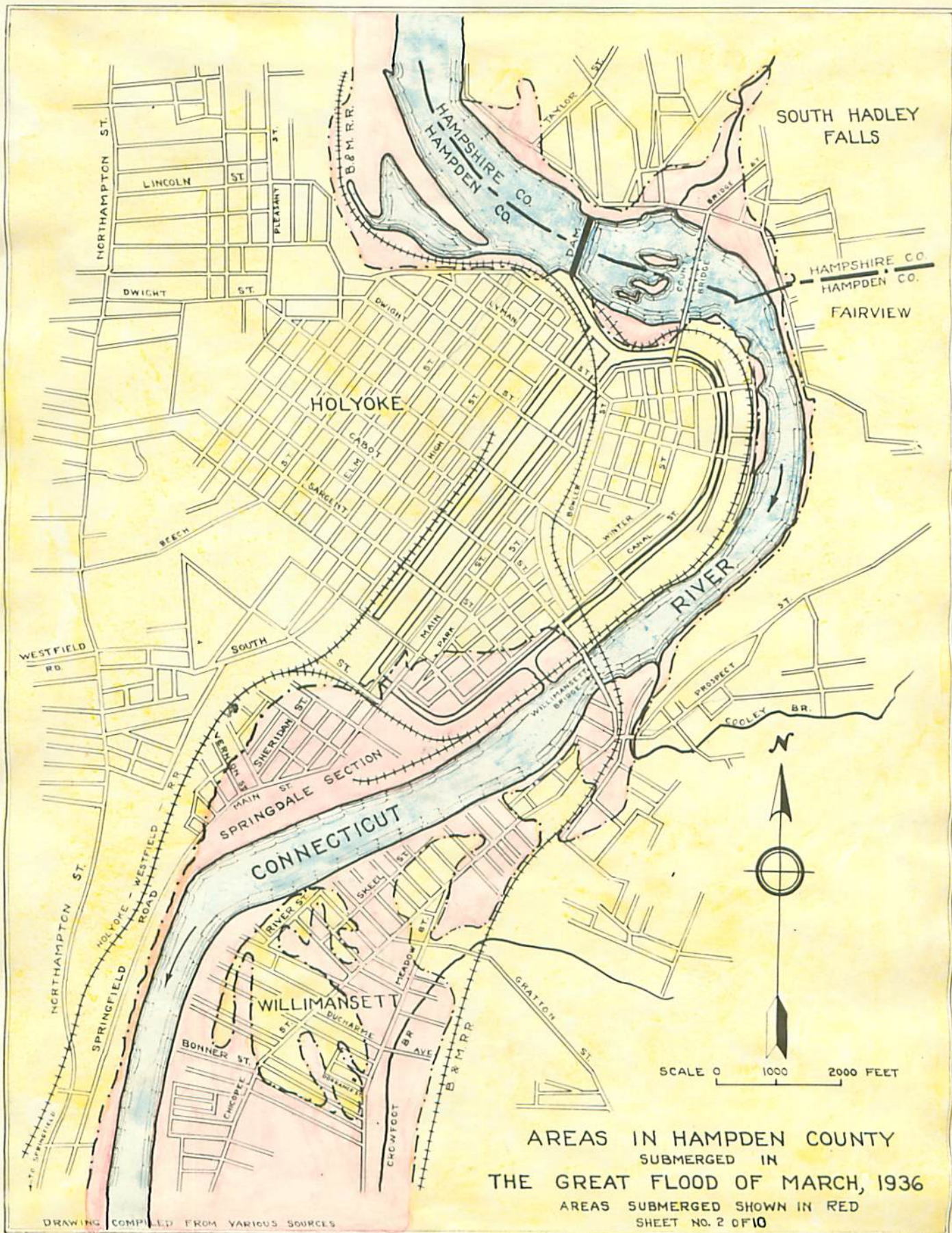
Dam	Hampden County
Water	Connecticut River

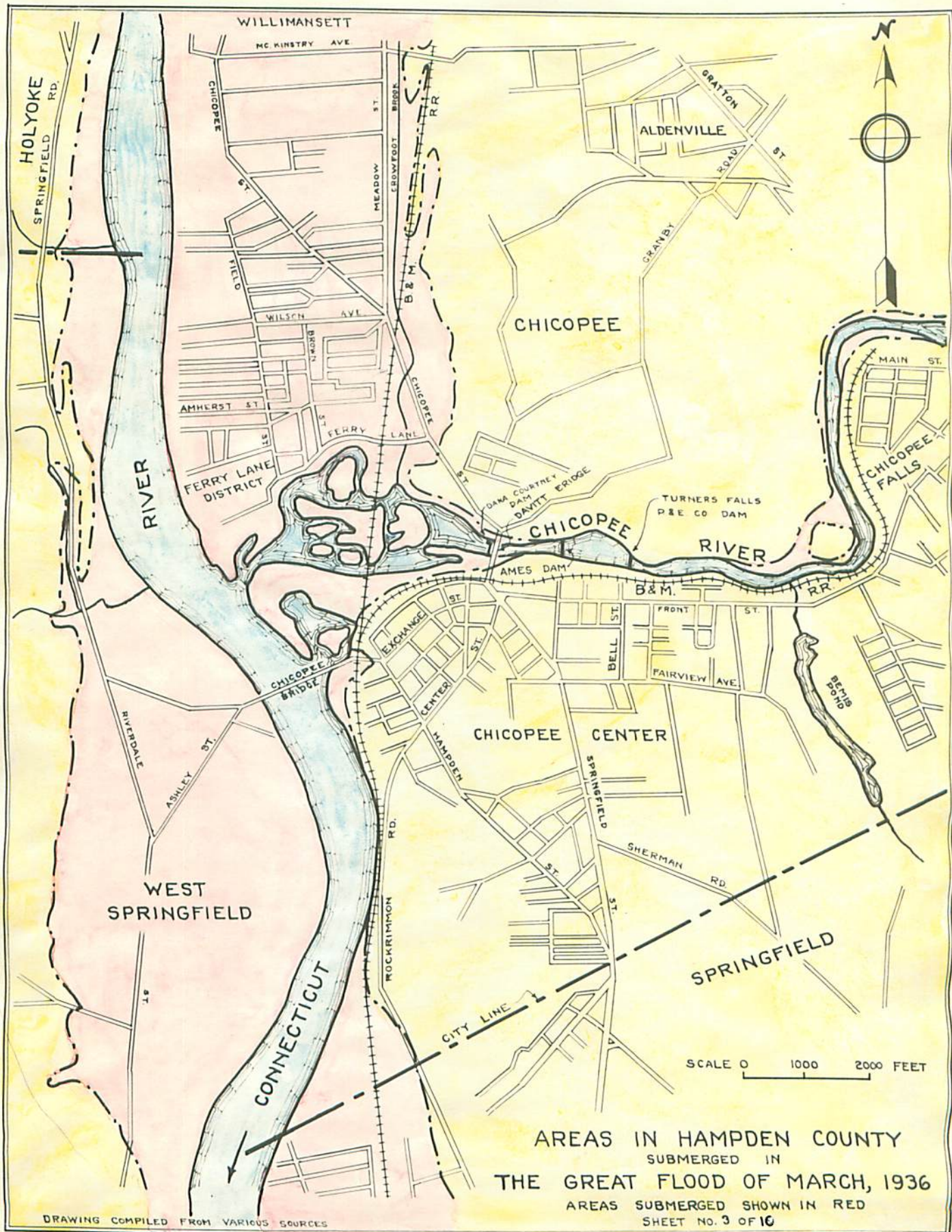
R E P O R T

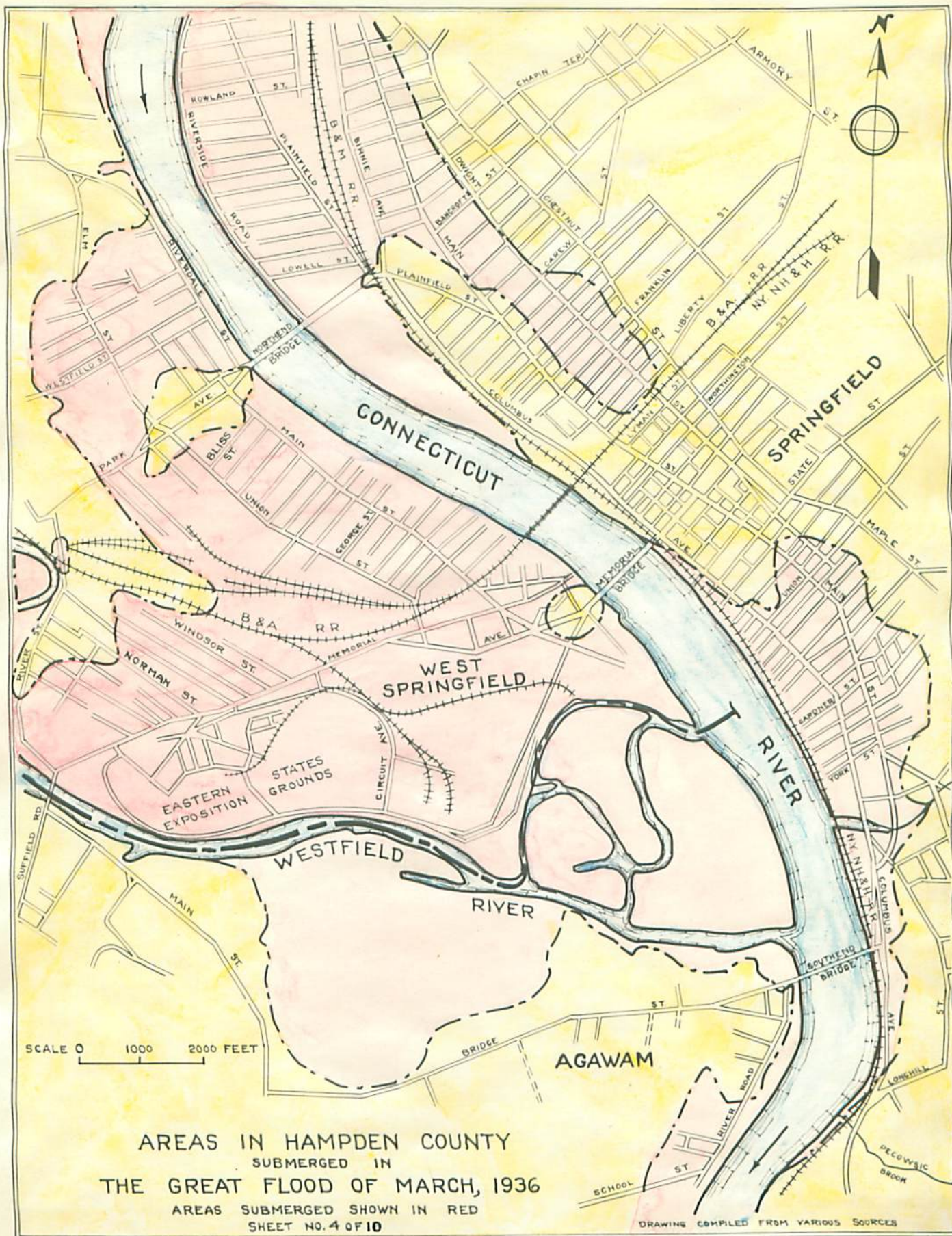
H A M P D E N C O U N T Y D A M S

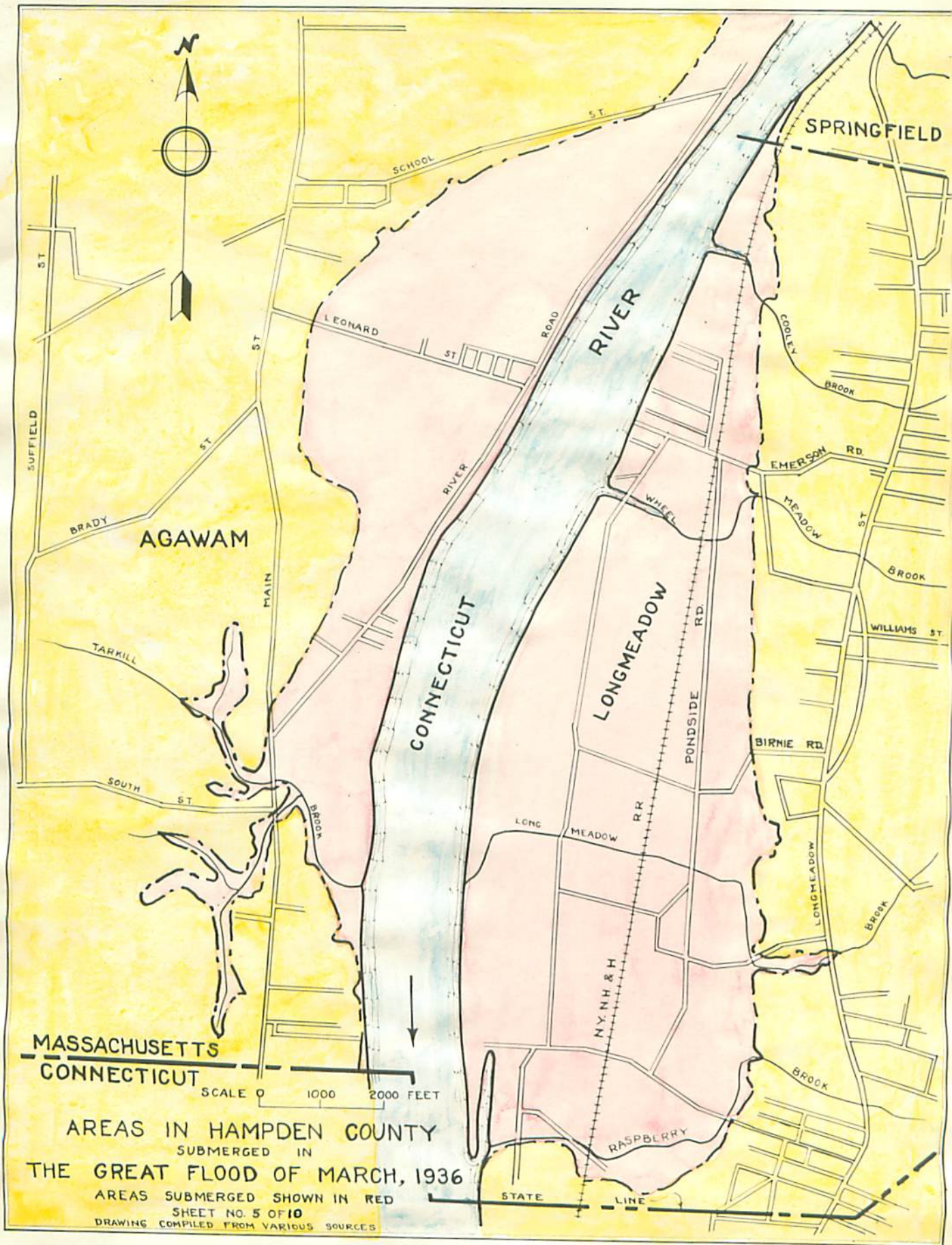
1 9 3 6

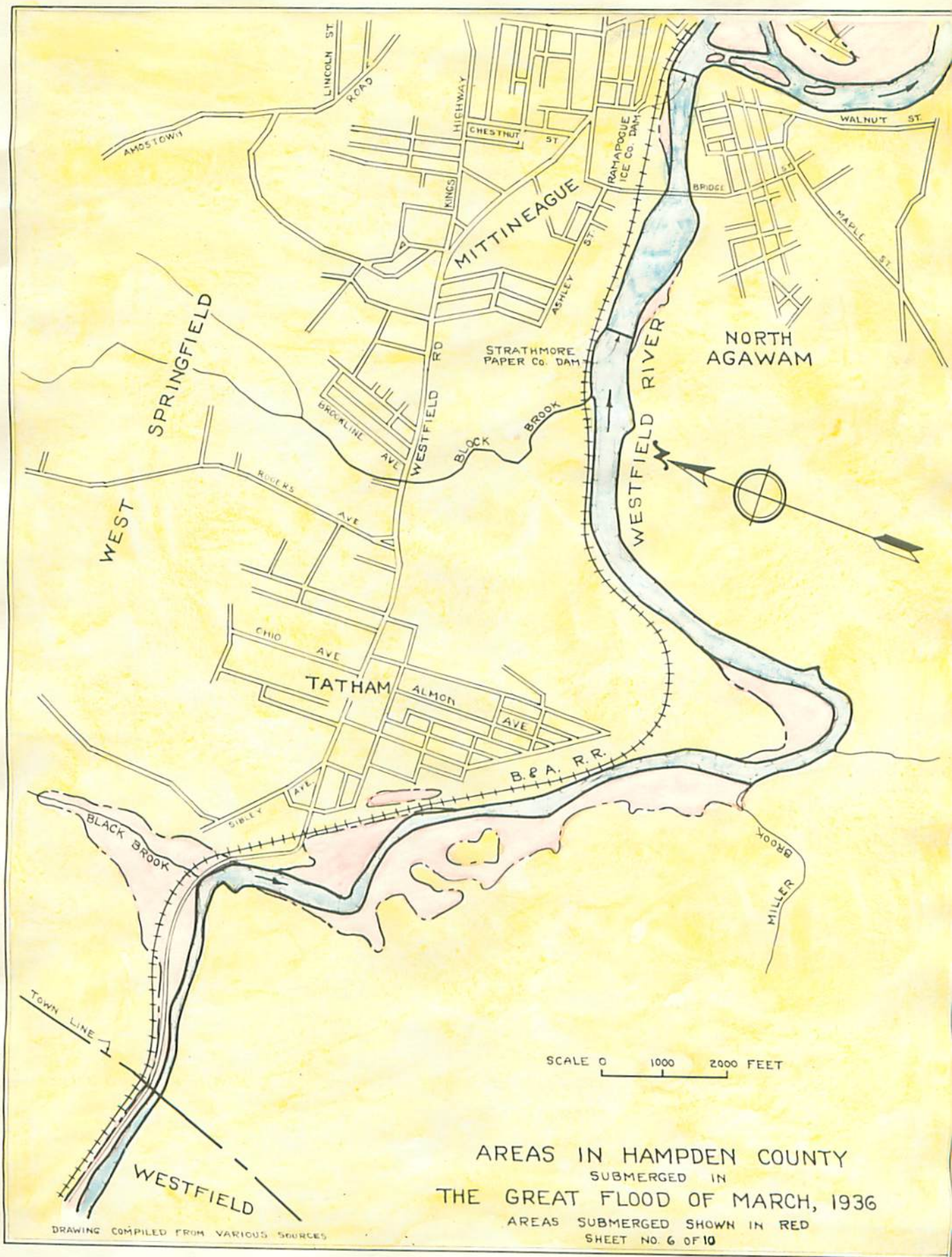


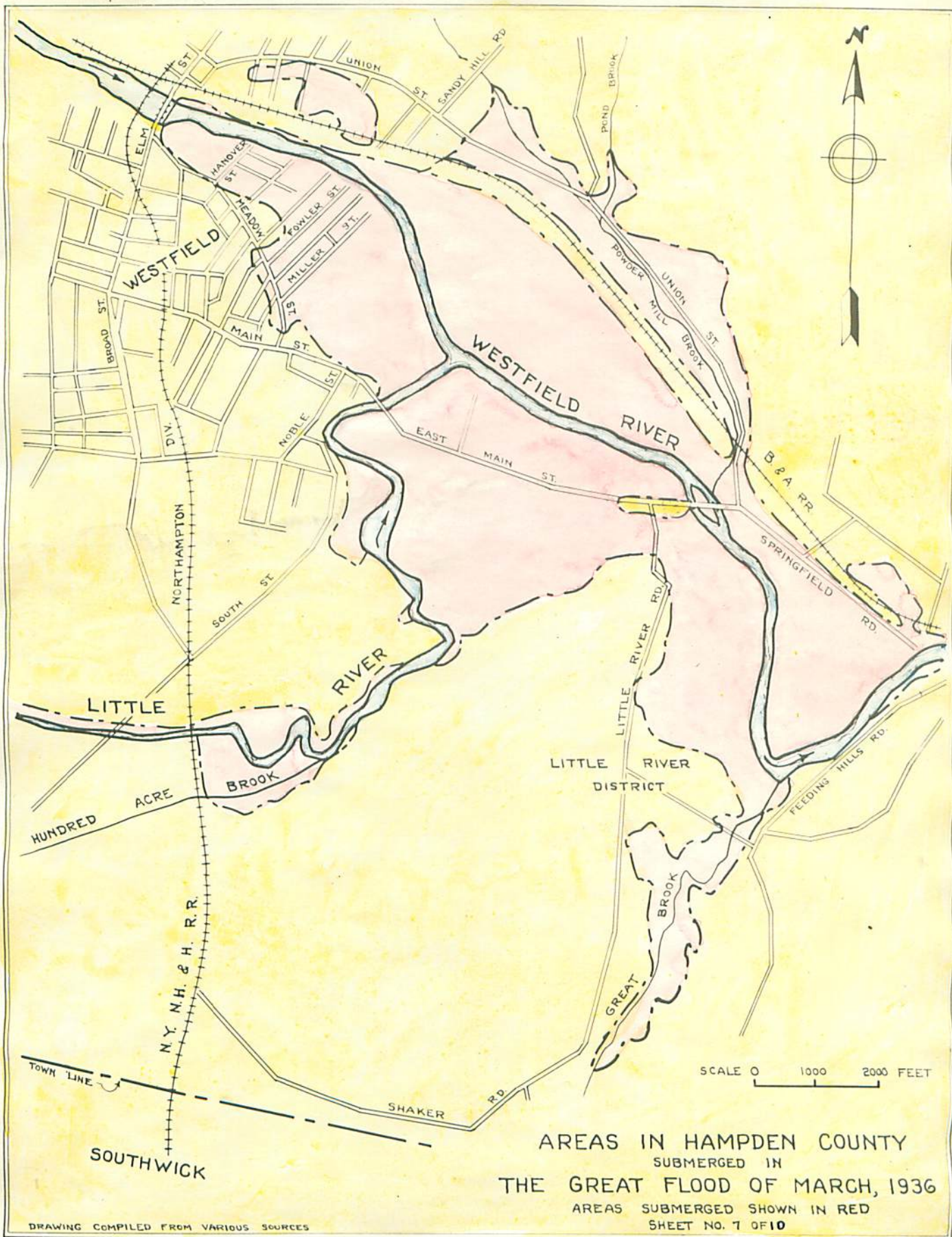


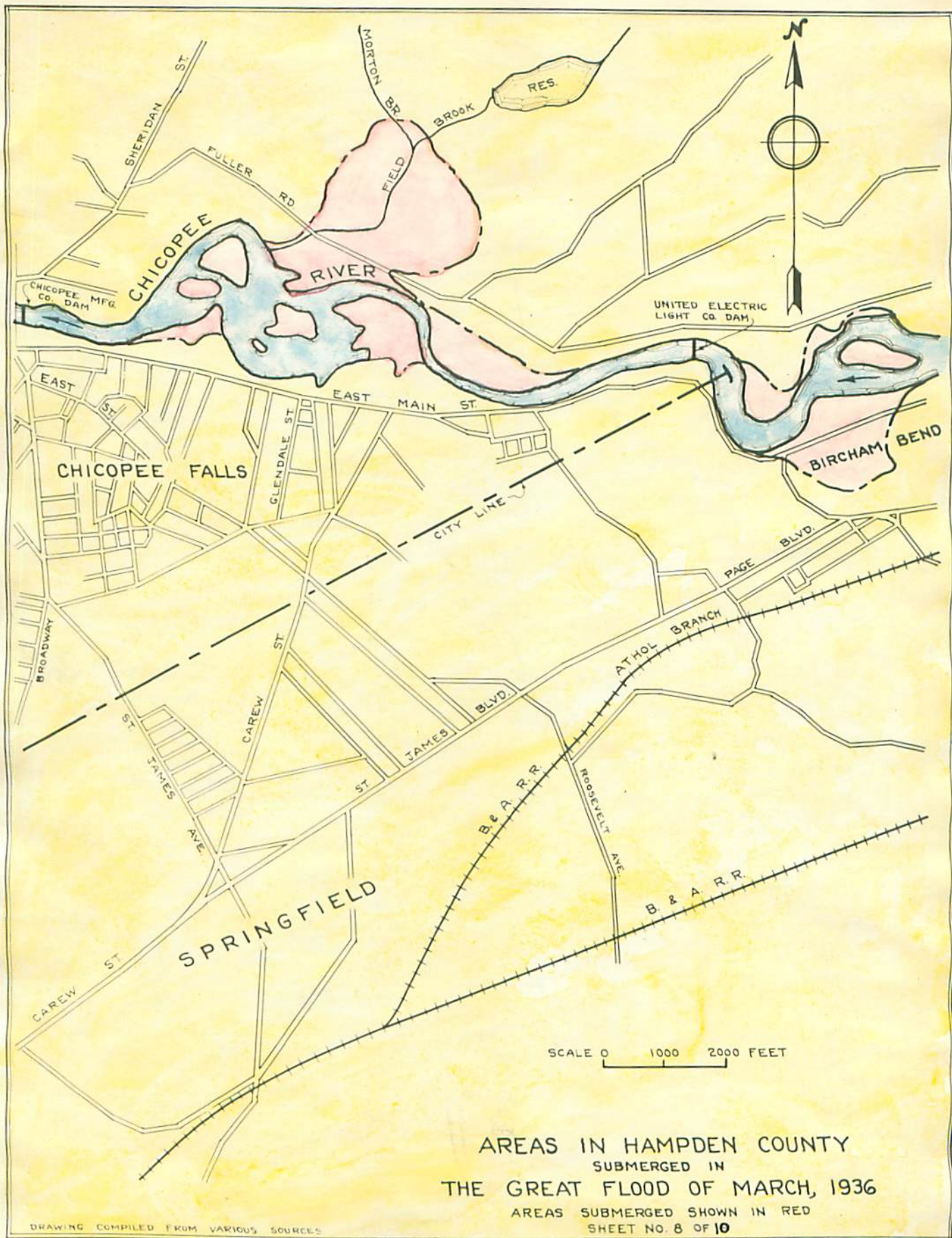












C O N T E N T S

	PAGE
DESCRIPTION OF GREAT FLOOD OF 1936	1
DRAWINGS ILLUSTRATING FLOOD.....	16
STATUTES RELATING TO SAFETY OF DAMS AND RESERVOIRS....	26

A P P E N D I X

FOREWORD.....	32
TABLE GIVING NUMBER OF DAMS AND NATURAL PONDS.....	33

DESCRIPTION OF DAMS IN-

AGAWAM.....	34
BLANDFORD.....	38
BRIMFIELD.....	43
CHESTER.....	50
CHICOPEE.....	54
CHICOPEE RIVER DAMS.....	62
EAST LONGMEADOW.....	65
GRANVILLE.....	66
HALPDEN.....	73
HOLLAND.....	78
HOLYOKE.....	81
LONGMEADOW.....	87
LUDLOW.....	89
MONSON.....	94
MONTGOMERY.....	106
PALMER.....	109
RUSSELL.....	115
SOUTHWICK.....	118
SPRINGFIELD.....	122
TOLLAND.....	130
WALES.....	134
WESTFIELD.....	138
WESTFIELD RIVER DAMS.....	146
WEST SPRINGFIELD.....	149
WILBRAHAM.....	154
CONCLUSION.....	156

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

TELEPHONE 5525
MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

January 2, 1937

The Hon. The Board of County Commissioners,
Hampden County
Springfield, Massachusetts.

Thomas J. Costello, Chairman:

Dear Sir:

In accordance with your instructions
I have made an inspection of the dams in Hampden
County during the past year ending Dec. 31st, 1936,
as is required by Section 45, Chapter 253 of the
General Laws, and report as follows:

In the beginning it may be stated
that the year 1936 has been a most exceptional
one, inasmuch as the stability of each dam was
challenged and severely tested by the most
torrential and disastrous flood which has ever
occurred, so far as is known, in this part of the
Country, or of which any records exist. This
flood occurred during the week beginning March
15th and swept over not only Hampden County and

the Connecticut Valley but the whole of New England and other sections in the Eastern part of the United States as well, thus constituting a major public catastrophe.

With the breakup of a long winter, in which there had been few thaws, the snowfall, which blanketed the hard frozen surfaces of drainage sheds, began to melt rapidly under a sudden unseasonal rise in temperature accompanied by heavy rains. The result was that, by the 18th and 19th of March, as the flood reached its peak, the swollen brooks and water courses from the hills and mountains, poured into the larger streams, until the latter overflowed and the riotous waters went on a rampage and beyond control.

The Connecticut River, gathering volume and momentum from its numerous tributaries as it surged southward, overflowed its banks and flooded all the lowlands along its course, from its upper reaches in Vermont and New Hampshire, to its mouth at Saybrook on the Sound, causing loss of life and also property damages amounting to many millions of dollars. The number of human lives lost in the whole of the Connecticut River Basin, as far as was ascertained was twelve, of

which one was in Hampden and one in Hampshire County.

In Hampden County, between Holyoke and the Connecticut State Line, the Connecticut River was turned into a great lake and thousands of people had to vacate their homes. Those who were tardy in leaving, because of not apprehending the danger so near their doors, had to be rescued from their second story floors in boats.

HOLYOKE

In Holyoke the low grounds bordering the river and canal system were submerged, as was, also, the south end of the city, running from Cabot Street to the West Springfield Boundary Line and including all of Springdale, so called. At the peak of the flood the water stood at a height of $9\frac{1}{2}$ feet above the surface of South Main Street (Lower Springfield Road so called) at the corner of Springdale Avenue, or $6\frac{1}{2}$ feet higher than the peak of the previous record flood which occurred in November 1927.

The Springdale Protection Dike, built on the west bank of the Connecticut River by the City of Holyoke following the 1927 flood, was

submerged to a depth of 4 feet, although its top was two and a half feet higher than the high water level of the 1927 flood.

On March the 19th at 8 o'clock P.M. the flood at Holyoke reached its maximum height and continued at this height until 9 o'clock the following morning before it began to recede. High water level, as was shown by the river recording gage of the Holyoke Water Power Company, was 16.8 feet higher than the crest of the Holyoke Dam or 2.05 feet higher than the high water level of the 1927 flood.

The maximum discharge over the Holyoke Dam was estimated as 244,000 cubic feet per second or approximately 29 cubic feet per second per square mile of drainage area. This discharge was about 37 per cent higher than the estimated maximum discharge of the 1927 flood.

Downstream about one-third of a mile from the Holyoke Dam, at the Holyoke-South Hadley Falls County Bridge, the flood waters raised to the level of the flooring of the bridge and the force of the current and pounding and battering of ice cakes, logs etc. against its lower chords, not only distorted some of the metal work but moved two of the spans on their seats some inches out of alignment.

CHICOPEE

In Chicopee all of the river front was submerged, including the greater part of the village of Willimansett, in which Chicopee Street, the main artery leading to the Willimansett-Holyoke Bridge, was submerged between Emerson Street and Chapel Avenue, a distance of approximately 600 feet. The depth of water on this street, at the intersection of Prospect Street, was a little over $1\frac{1}{2}$ feet.

The high water level of the flood, as registered on the gage located at the Chicopee-West Springfield Bridge, was 69.94 feet above Mean Sea Level or $5\frac{1}{4}$ feet higher than the high water level of the flood of November 1927.

At Chicopee Falls the Chicopee River overflowed its banks, causing some property damage and submerging a part of the Fuller Road, so called, located on the northerly side of the river.

SPRINGFIELD

In Springfield a large part of the Business Center was submerged, including Columbus Avenue and Main and Dwight Streets north of the Boston and Albany Railroad, likewise Columbus Avenue, Main and Willow Streets southerly from

State Street.

The depths of water on the roadways at some of the street intersections were as follows:

Lowell and Plainfield Streets 9.2 feet; Columbus Avenue and Union Street 2.5 feet; and Main and Margaret Streets 4.4 feet.

The high water level, registered on the river gage at the Memorial Bridge, was 28.6 feet, or 6.2 feet higher than the high water level of the 1927 flood. This reading of 28.6 feet shows a height of 66.36 feet above Mean Sea Level.

On the night of March 20th and for several nights following, the business district of Springfield was in darkness, due to the flooding of the United Electric Light and Power Company Station near the foot of State Street, which furnished the district with electric light, including street lighting. Some establishments, too, operated by electric energy from this station were badly crippled, including the Springfield Union and Republican newspapers, which had to be printed out of town.

WEST SPRINGFIELD

Across the river from Springfield in West Springfield, the greater part of the Business Center of the town was inundated, a condition that

had never occurred before, as far as is known, in the history of the town. To show the extent of the flood here, it may be stated that out of the 3200 dwellings in the town 1635 or a little over one half, were within the flooded area. Besides inundating this large area, the flood caused two major breaches in the dike system of the town, one in the Connecticut River Dike north of the Chicopee-West Springfield Bridge, and the other in the Westfield River Dike, at the east end of the Oxbow, where a considerable stretch of the Dike was washed away.

At the intersection of Riverdale Road and Morgan Street high water was 7 feet in depth on the surface of the roadway and, at the intersection of Union Street and Memorial Avenue, $8\frac{1}{2}$ feet. In St. Anne's Church, located at the corner of Union Street and Memorial Avenue, the water was 5.2 feet in depth on the main floor of the church and, at the Eastern States Exposition Grounds, it was 10.2 feet in depth over the floor of the main entrance to the coliseum, or 6.4 feet higher than the high water level of the 1927 flood at the same place.

AGAWAM

In Agawam all of the River Road, so called, was submerged and practically all of Leonard Street, also most of the meadows along the Westfield River opposite the Eastern State Exposition Grounds, as far south as Bridge Street.

LONGMEADOW

In Longmeadow the flood extended all the way across the low-lands (General Field, so called) to the foot of the steep bluff which runs nearly in a straight line northerly and southerly between Pondside Road and Longmeadow Street.

The flood reached its peak at Longmeadow around 2 A.M. on March 20th when the water stood at a height of 7.4 feet above the Brass Geodetic Bench Mark, which is located on the culvert crossing Emerson Road, about 200 feet east of the New York, New Haven and Hartford Railroad Tracks. This height was 6.4 feet higher than the high water level of the 1927 flood at the same point. At the town service station on Pondside Road the water reached a height of 5.1 feet above the concrete floor of the station.

WESTFIELD

On the Westfield River the peak of the flood reached the City of Westfield early on

March 18th, or almost two days before the peak of the flood on the Connecticut River at Springfield.

At Westfield, on the northerly side of the river, the flooded area extended up Powder Mill Brook and Union Street as far as Sandy Hill Road. On the southerly side of the river practically all of the land northeast of Meadow Street and Main Street was under water, as were, also, sections of the Russell Road and nearly the whole length of the Springfield Road from the Little River Bridge to the West Springfield Town Line. The water, also, set back under the Boston & Albany Railroad Viaduct, flooding North Elm Street at Depot Square and cutting off all vehicular traffic over the Elm Street Bridge spanning the river, although the bridge itself was not affected by the flood.

The maximum height of the water crossing the old Horton Dam, now the Quinnetuk Company Dam, located close to the Elm Street Bridge, was 10.3 feet.

At Little River Bridge on the Springfield Road, the high water level was about 2 feet below the roadway surface at the center of the bridge, or about 1.8 feet higher than the high water level of the 1927 flood at the same point.

This 1936 flood was the fourth major one on the Westfield River within the past 67 years. The three previous floods occurred, one in 1869, one 1878 and one 1927. Of these three there is no question about the 1878 flood being the greatest one, but there is not, however, sufficient data, relative to its magnitude, to make a comparison with the 1936 flood. At all events, it appears that there was more damage done by the 1878 flood than by the 1936 flood.

The drawings appended, numbered 1 to 8, indicate the flooded areas in Hampden County and those numbered 9 and 10 are graphs showing the height of the Connecticut River at the Holyoke Dam and at the Memorial Bridge in Springfield during the flood. The graphs also show the height of the river at these places during the flood of November, 1927.

Notwithstanding such a phenomenal condition in Hampden County, it gave great satisfaction to know that no material damage was done to any of the dams in the County with the exception of the dislodging of the granite crest stones of the dam across the Connecticut River at Holyoke, a washout in a small earthen sawmill dam on the Mill Lane Brook in Brimfield

known as the "Wilcox Dam", and a washout in the low earthen dike attached to the end of the Upper Thorndike Masonry Dam across the Ware River in Palmer.

It appears that the crest stones of the Holyoke Dam were dislodged, not by high water but by the battering of huge ice cakes which passed down the river about four days before the peak of the flood.

The Wilcox Dam in Brimfield was repaired at a cost of \$1000.00 or thereabouts, and the dike in Palmer, which is now being strengthened and raised, with the work nearly completed, had been estimated to cost around \$2500.00. The Holyoke Dam also has been repaired, with the crest being rebuilt of concrete masonry instead of stone masonry as before.

Where, in round numbers, 250 dams were at stake in the County, and considering the torrential character and fury of the flood, the record shown of their stability speaks for itself.

The facts relating to this memorable flood of 1936 have been added to man's experience and furnish most important data upon which the actions of the future should be based, even though the mathematician tells us that, according to the

theory of the probabilities of events, a flood of such magnitude is not likely to occur again for a thousand years.

If the conditions of a normal year, however, are sufficient to make plain the grave responsibility which the statutes have placed upon the County Commissioners in charging them with the safety of all dams within the County, of what immense importance then, does this responsibility become during such an event as occurred in 1936.

Immediately after the flood had subsided a special inspection was made of all the dams to ascertain their condition, and it was very gratifying to find out that practically all the material damage done by the flood was confined to the three structures mentioned above.

During the year the work of extending the two culverts on the Willimansett Brook at the Hampden Brewery Company in Willimansett, Chicopee, has been completed. This work was done in accordance with plans and specifications approved by the County on December 4th, 1935.

At the Piper Reservoir in West Springfield the overflow level or water surface was raised a height of one foot, for which the

approval of the County was given on July 22nd, 1936.

The repairs on the Wilcox Dam in Brimfield, already referred to above, were completed and those on the dike at the Thorndike Dam in Palmer, also referred to above, were practically completed. The plans and specifications for the doing of the former work were approved by the County on August 11th, 1936 and for the latter work on November 30th, 1936.

The work of overhauling and strengthening the Lemieux Dam, so called, located near the Granby Road in Chicopee, was started but had to be discontinued because of the setting in of the cold weather. The plans and specifications for the strengthening of this structure were approved by the county on October 28th, 1936.

The Bemis Dam and Pond, which have caused some concern to the County Commissioners in the past, have been purchased by the City of Chicopee and the property is going to be converted into a recreation park. The dam will be completely overhauled and strengthened, and a new surface overflow constructed, in accordance with the plans and specifications approved by the County on September 9th, 1936.

Besides the ordinary matters handled in connection with the dams, special investigations were made relative to vibration caused by the

impact of water falling over the crest of the Stevens Paper Co. dam in Westfield and, also, in relation to the matter of extending the spillway of the Chapin & Gould Co. Dam in Russell, as requested by the Boston and Albany Railroad.

In most cases, the advisability of making needed repairs on a dam, is drawn to the attention of the owner by the engineer at the time of the regular inspection. In other cases, such as, when the owner is not present at the time of the inspection, letters are prepared for and sent by the County informing the owner of the need for repairs. Such letters were sent during the year to the owners of the DeBona, Baker and Fletcher Dams in Southwick, the Lincoln Dam in Blandford and the Holbrook Dam in Palmer.

Inasmuch as this report covers the greatest flood on record in Hampden County and, also, contains considerable data on the great flood of 1927, it is probable that, in the future, it may be referred to more often than the reports of other years by persons interested in the dams of the County. From the standpoint of convenience, therefore, it was thought that it would be advisable to add to this report, at a later date, an appendix consisting of a revised list and description of all the dams in the County and it

is the intention to prepare such an appendix from the data obtained at the time of the next inspection of the dams.

When this appendix is added there will be available in one volume, an up to date reference on all the dams in Hampden County, and a description of the greatest flood ever experienced in the County.

Respectfully submitted,

James L. Tighe

NOTE:

For convenient reference the statutes relating to the safety of dams and reservoirs are set forth in full on pages 26-30 inclusive.

STATUTES RELATING TO THE
SAFETY OF DAMS AND RESERVOIRS

The statutes which define the
Powers and duties of the County
Commissioners over dams and reservoirs
are contained in the general laws
(Tercentenary Edition) Chapter 253,
Section 44 to 50, which are as follows:

GENERAL LAWS (Ter. Ed.)
Chapter 253, Section 44.

A reservoir, reservoir dam or mill dam shall not be constructed or materially altered until plans and specifications of the proposed work have been filed with and approved by the County Commissioners of the county where it is situated. Said Commissioners shall retain and record such plans and specifications and shall inspect the work during its progress; and if at any time it appears that the plans and specifications are not faithfully adhered to, they may appoint an inspector to be constantly engaged at the expense of the owners in the supervision of the work. Upon a refusal of the owners or of their agents to adhere to said plans and specifications, said inspector may order the discontinuance of the work. This and the six following sections shall not apply to small dams, constructed for irrigation or for other purposes, the breaking of which would involve

no risk to life or property, nor to standpipes or tanks, nor to a dam where the area draining into the pond formed thereby does not exceed one square mile, unless the dam is more than ten feet in height above the natural bed of the stream at any point or unless the quantity of water which the dam impounds exceeds one million gallons.

Section 45.

The county commissioners shall, as often as once in two years, cause a thorough examination to be made of every reservoir, reservoir dam and mill dam by the breaking of which loss of life or damage to a road or bridge is likely to be caused, and they shall at any time cause such examination to be made upon written application by the mayor and aldermen of a city or the selectmen of a town where such damage is likely to be caused. Any party whose property is likely to be damaged by the breaking of any such structure may make a written application to the commissioners, setting forth the facts and the ownership of such structure which is believed to be unsafe, and the commissioners may thereupon cause said structure to be examined. If upon examination the structure is deemed safe, the costs of such application and examination may be ordered paid by the party making the application. The

commissioners shall cause every examination to be made by a competent engineer who shall report to them in writing whether he considers the structure safe and in good condition, and if not, its condition in detail and the work or the changes required for safety and the public good. The engineer shall be allowed by the commissioners a reasonable compensation for his services which shall be paid by the county in the first instance. Ownership of the structure shall be ascertained and, so far as possible, examinations shall be made in co-operation with the owner or his agent.

Section 46.

If, upon examination, the structure is not, in the judgment of the commissioners, sufficiently strong to resist the action of the water under any circumstances which may reasonably be expected to occur, they shall, with the advice of an engineer, determine and direct what alterations or repairs are required to make the structure permanent and secure, and shall in writing order the owners thereof to make such alterations or repairs within a reasonable time, and the results of such examination and the orders thereon shall be duly recorded by said commissioners.

Section 47.

If, after notice in writing to the owner of a reservoir or dam which has been so

examined and adjudged to be unsafe, the said owner refuses or neglects to make such alterations or repairs as the commissioners order, they may, at the expense of the county, cause such reservoir or dam to be altered and repaired or any part thereof removed or the water drawn off, whichever they may consider necessary for the safety of life, property, roads or bridges on the stream below. After such removal, no structure shall be erected except in compliance with the three preceding sections, and after the water has been drawn oof, the reservoir shall not be filled again until the orders of the commissioners have been complied with.

Section 48.

The commissioners shall make such orders as they may deem just as to the payment by the owner, county or other party or the costs and expenses incurred by them under the three preceding sections, and if the reservoir or dam was adjudged to be unsafe, said costs and expenses may be ordered paid by the owner, with interest, from the time they were paid by the county. Notice shall be given the county treasurer and the owner or other party of the amount due the county.

Section 49.

No order, approval, request or advice of the county commissioners shall impair the legal

duties and obligations of the owners, of reservoirs, reservoir dams or mill dams or their liability for the consequences of their illegal acts or of the neglect or mismanagement of their servants or agents.

Section 50.

The supreme judicial and the superior courts shall have jurisdiction in equity to enforce the six preceding sections.

NOTE:

The Tercentenary Edition of the general laws comprises the general laws of 1920 with all amendments thereto, made prior to January 1, 1932. There has been no new legislation during the years 1932 to 1936 inclusive.

A P P E N D I X
Containing
DESCRIPTION OF ALL DAMS IN HAMPDEN COUNTY
1937

A P P E N D I X

This is a comprehensive appendix containing the location and description of every dam in Hampden County, as far as is known. It includes not only those dams in service at present, but, also, the abandoned and derelict structures, and the natural ponds as well.

In its arrangement, the dams are grouped together under the town in which they are located, with each dam listed under the name of its owner and with the towns set forth in alphabetical order, beginning with Agawam and ending with Wilbraham.

Where there is more than one dam on a stream, they are described in the order of their proximity to the mouth of the stream. The dams on the main stream are always described first, and then followed by those on its tributaries. The only exceptions to this arrangement, are in the case of the dams on the Chicopee and Westfield Rivers which, although noted in the towns they are located, are described under the headings "Chicopee River Dams" and "Westfield River Dams".

In the case of a dam built across a stream which forms the boundary line between two towns, it is described under that town in which the industry or plant attached to the dam is located.

The names and addresses of the owners of the dams are those obtained in the field at the time of inspection, but no attempt has been made to verify them by examining titles in the Registry of Deeds. In case, however, of an error being made in the ownership, this would be of no great concern, since the location, size, and type given in the description, should be sufficient to identify and trace any particular dam, not only in the past and present, but, also, through any further changes of ownership in the future.

As a means to this end, not only is the location of every dam on the stream given, but in many cases, its situation with reference to some local place-name, village, highway or other land-mark.

The names of the stream given are those shown on the State topographical maps and, where a stream is un-named on these maps, the name, by which the stream is known locally, is given.

The drainage areas contributory to the dams have, also, been computed from the state topographical maps, except those of the Connecticut River and Chicopee Rivers, which were taken from State and Federal Government records.

Most of the dams were measured in the field, but no attempt was made, however, to obtain absolute accuracy, since approximate measurements are sufficient for checking as to safety and conveying to the mind the magnitude of a structure, as well as, if the measurements were made to the nearest inch. The measurements of some of the larger and more important structures were taken from the construction plans or other records, and the data thus obtained were checked up by measurements taken of the actual structure wherever possible.

Where the length and height of a dam are given, these are respectively, the maximum length of the structure along its top, and the maximum height of its top above the natural streambed. In the case of a spillway dam, the crest of the spillway is considered the top.

Wherever actual surveys of the areas of the ponds formed by the dams were available, these were used; otherwise the areas were estimated without actual measurements being made. This was quite sufficient, because, contrary to what many believe, the pressure on a dam does not depend upon the size of the pond formed, but only upon the depth of the water behind the dam. In other words, providing the depth of water against the dam is the same, the pond covering say, only one acre, exerts just as much pressure against the dam, as if the pond covered say, a thousand acres.

The law of inspection of dams does not apply to natural ponds, that is, bodies of water not raised by dams. Because, however, of their apparent close relationship to the subject of dams and reservoirs, the natural ponds are listed and described in this appendix in the same manner as the dams.

The following table shows the number of dams in each town of the County, including those forming ponds, those no longer forming ponds, and, also, the number of natural ponds in each town.

TABLE SHOWING
NUMBER OF DAMS AND NATURAL PONDS
IN EACH TOWN IN HAMPDEN COUNTY
AS OF DECEMBER 1936

NAME OF TOWN	DAMS FORMING PONDS	DAMS NO LONGER FORMING PONDS	TOTAL NUMBER OF DAMS	NATURAL PONDS
Agawam	9	4	13	0
Blandford	6	7	13	2
Brimfield	13	7	20	1
Chester	6	7	13	1
Chicopee	24	8	32	0
East Longmeadow	0	1	1	0
Granville	12	10	22	2
Hampden	11	4	15	0
Holland	4	5	9	2
Holyoke	14	3	17	0
Longmeadow	2	2	4	0
Ludlow	8	3	11	7
Monson	37	6	43	2
Montgomery	5	2	7	1
Palmer	19	3	22	3
Russell	8	0	8	0
Southwick	5	6	11	2
Springfield	18	4	22	10
Tolland	7	4	11	2
Wales	8	6	14	0
Westfield	13	11	24	3
West Springfield.....	11	5	16	0
Wilbraham	6	2	8	2
Total	246	110	356	40

A G A W A M

There are thirteen dams in Agawam, ten of which are on Three Mile Brook and its tributaries, and three on Still Brook and its tributaries.

In addition to these are the three dams across the Westfield River, which divides Agawam from West Springfield, namely the Ramapogue Dam and the two Strathmore Paper Company Dams, which are described under the Westfield River Dams.

Another structure which lies partly in Agawam is the Springfield Water Works Provin Mountain covered reservoir. This structure is almost equally divided by the boundary line between Agawam and Westfield, but is described under the latter town. There are no natural ponds in Agawam.

L. L. WHITMAN DAM.

Three Mile Brook rises about one and one-half miles northwest of Agawam Center and flows southeasterly, emptying into the Connecticut River north of Riverside Park. It is three miles in length and has a total drainage area of about ten square miles.

At a point about five hundred feet from the mouth of the brook, where the drainage area is practically the total drainage area of the brook, there were formerly located a dam and paper mill belonging to L. L. Whitman. Both the dam and the mill were abandoned years ago, and only traces of the establishment now remain.

BATTISTA BONOMI DAM.

On the north tributary of Worthington Brook, which in turn is a tributary of Three Mile Brook, is an ice pond dam belonging to Battista Bonomi, Agawam, Mass. The dam is located at Hubbard Corners where the drainage area contributory is about two-tenths of a square mile. The pond formed covers about a quarter of an acre and has a small capacity.

The dam is an earthen embankment faced on the upstream side by a concrete wall fourteen inches in thickness, seventy feet in length, and six feet in height, with a concrete spillway twelve feet in length built in the structure.

HARVEY PORTER DAM.

On Tarkill Brook, which is another tributary from the west of Three Mile Brook, is located a dam belonging now or formerly to Harvey Porter, Agawam, Mass. The location of the structure is about one-third of a mile upstream from the confluence of the brooks, at a point where the drainage area contributory is about three-quarters of a square mile. The structure, which is an earthen embankment that formed a pond four acres in area, has not been in use for some years and has a free water way through it.

AGAWAM SPORTSMAN'S CLUB DAM.

This dam is on another tributary of Three Mile Brook from the west, called the Agawam Company Brook. It is located about two thousand feet upstream from the mouth of the tributary or a short distance upstream from the Agawam Company Mill, at a point where the drainage area contributory is about one and one-half square miles. It belongs to the Agawam Sportsman's Club, Agawam, Mass.

The dam is an earthen embankment four hundred and twenty-five feet in length and ten feet in height. There are two concrete spillways having a combined length of about twenty-five feet, one at or near the center of the dam and the other at the end of a canal three hundred feet in length, which runs from the south end of the structure.

The crest of the spillways are only two feet below the top of the dam, and, if the dam is ever put in use again the embankment should be raised at least a foot, making three feet of freeboard between the spillway crests and the top of the dam.

The dam was built in 1920 and formed a pleasure and fishing pond about two and one-half acres in area. Some eight or ten years ago, however, a portion of the structure was removed and the brook allowed to flow free in its natural bed, so that the structure no longer backs up water.

AGAWAM COMPANY DAM.

Upstream about four hundred feet from the Agawam Sportsman's Club Dam, last described, is a mill dam forming a pond of about eight acres and having a drainage area contributory of practically one and one-half square miles. This dam is owned by the Agawam Company, Agawam, Mass., and is used to supply power to a woolen mill located about three hundred feet or thereabouts downstream. The mill was established in 1812 and is still a going concern.

The dam is an earthen embankment of heavy section, about one hundred and seventy-five feet in length and about twelve feet in height. The overflow or spillway, located at the southerly end of the dam, is a concrete structure thirteen feet in length provided with wing walls on the upstream side. The crest of the spillway is three feet below the top of the embankment.

SPRINGFIELD ICE COMPANY DAM (FORMERLY AGAWAM COMPANY DAM NO. 2).

About one-half a mile upstream from the Agawam Company dam, last described, at a point where the drainage area is a little over one square mile, is a dam owned by the Springfield Ice Company, 195 Alden Street, Springfield, Mass., who purchased it over ten years ago from the Agawam Company.

It is an earthen embankment two hundred feet in length, eighteen feet in height and twenty feet in width on the top, which is used as a private roadway. The spillway is located at its south end and is built of concrete. It is nine feet in length, with its crest two and one-half feet below the top of the dam. A sluice gate is fashioned in the middle of the spillway for the purpose of regulating the flow to the pond below, and the roadway is carried over the spillway by a small wooden bridge. The spillway channel is built of stepped concrete and concrete walls extend on both sides of the spillway and channel to a point below the toe of the dam.

PAUL KORSEN DAM NO. 1.

The next dam on the Agawam Company Brook is located about three-quarters of a mile above the Springfield Ice Co. dam, at a point where the drainage area contributory is not over a quarter of a square mile. This dam was built in 1929-1930 by the present owner, Paul Korsen, Gardner Street, Agawam, Mass. It forms an ice pond, which covers an area of about two acres and has a capacity of about two millions of gallons.

The dam is an earthen embankment one hundred and forty feet in length, eleven feet in height above the streambed and twenty feet in width on top. A reinforced concrete core wall, one foot thick extends through the entire length of the structure and, from below the natural ground level to within four feet of the top of the embankment. The spillway is a reinforced concrete shaft or well, five by five and one-half feet in section, built in the face of the embankment at a point thirty feet from its north end. From this well, the top of which is three feet below the top of the embankment, a reinforced concrete culvert three feet square extends through the foundation to a point below the downstream toe. A reinforced concrete drain pipe, twenty-two inches in diameter, is laid from the well through the foundation to the upstream toe.

PAUL KORSEN DAM NO. 2.

Located at the mouth of a small brook which enters the pond formed by the Paul Korsen dam No. 1, not more than three hundred feet upstream from the latter, is another dam belonging to Paul Korsen. This dam was constructed about twenty-five years ago by one Diegal to form an ice pond. It is an earthen embankment containing a cement block core wall located about ten feet upstream from its center line. The length of the dam is about one hundred feet, its height seven feet and the width of the top, which serves as a private roadway, is about twenty feet. There are two overflows provided in the structure. The first of these is a concrete channel twenty-six inches wide and twenty-six inches deep, covered by planking to carry the roadway. The second is in the form of a circular well in the pond located forty-five feet from the north end of the dam, from which a sixteen inch corrugated iron pipe extends through the foundation of the dam.

The area of the pond formed is about three-quarters of an acre and its capacity about one-quarter of a million of gallons, while the drainage area contributory is apparently not more than one-eighth of a square mile.

SALVATORE ZERRA DAM.

On the headwaters of the Agawam Company Brook and west of Gardner Street, where the drainage area is less than a quarter of a square mile, is an ice pond dam belonging to Salvatore Zerra, Feeding Hills, Mass. This dam, built in 1925, is an earthen embankment one hundred and fifty feet in length, about eight feet in height, and is faced on the upstream or pond side with a concrete wall one foot thick. The overflow is a concrete well built into the embankment near its center. It is four feet in width and contains stop planks for regulating the height of the pond. The well is connected with a concrete culvert four feet square in section which passes through the foundation to a point below the downstream toe of the dam.

The area of the pond formed is about one and one-half acres.

DOMINICK DI DONATO DAM.

Upstream at a point about one thousand feet from the Zerra dam, last described, where the drainage area is very small, is another ice pond dam, which is owned by Dominick Di Donato, Gardner Street, Feeding Hills, Mass.

It is an earthen structure one hundred feet in length, seven feet in height, and about twenty feet in width on the top.

There are two overflows in the dam, one being a concrete sluiceway arranged with stop planks for regulating the height of the pond, and the other a pipe culvert laid through the embankment at the high water level of the pond.

L. F. HART DAM.

This structure is located in the very southwest corner of the town of Agawam on a tributary of Still Brook from the west, at a point where the drainage area contributory is one-fifth of a square mile, and belongs now or formerly to L. F. Hart, Feeding Hills, Mass. It forms a shallow pond about five acres in area.

The dam is an earthen embankment two hundred and fifty feet in length, three feet in height, and ten feet in width on top. Two 24 inch culverts, one near each end of the dam, provide the necessary overflow.

W. D. RISING DAM.

This dam is on another tributary from the west of Still Brook, into which it empties about one and one-half miles upstream from the Massachusetts-Connecticut boundary line. It is located near the mouth of the tributary on which it is built, where the drainage area is about one-half of a square mile, and belongs to W. D. Rising, West Street, Feeding Hills, Mass.

The dam is an earthen embankment three hundred feet in length, eight feet in height and carries the highway known as West Street on its top. The spillway is a stone culvert under the highway, four feet high and five feet wide.

The structure forms a pond covering about 10 acres, known as Leonard pond, from which water was drawn, in the past, to run the sawmill attached. The old mill still stands but is in a dilapidated condition, and apparently abandoned for good.

THEODORE SMITH DAM.

About one mile southwest of Feeding Hills, at a point on Still Brook where the drainage area contributory is about one and one-half square miles, is a small dam now or formerly owned by Theodore Smith, Feeding Hills, Mass.

It is a small concrete gravity structure, five feet high, two feet thick at the base and fifteen inches thick at the top. The spillway is about six feet in length and located in the middle of the dam.

The dam is apparently abandoned, since there is a free waterway through the structure with no pond formed.

NATURAL PONDS

There are no natural ponds in Agawam.

B L A N D F O R D

There are thirteen dams and two natural ponds in Blandford, one on Borden Brook, two on Peeble Brook, one on Birch Meadow Brook, one on Pond Brook, one on Watson Brook, two on Wheeler Brook, one on a tributary of Wheeler Brook, one on Potash Brook, one on a tributary of Potash Brook, one on Freeland Brook and one on Cold Brook. Besides these, there is a small portion of the Cobble Mountain Dam that extends into the Town of Blandford. As much the greater portion lies in Russell, however, this dam is described under that town.

There were formerly three more dams in Blandford, namely, the Bates Tannery, the Curtis Phelon, and the Karr dams. The Bates Tannery dam was located on Tannery Brook, a small tributary of Borden Brook, while the Curtis Phelon and Karr dams were sawmill structures located on Peeble Brook. All these three dams having been situated within the limits of the Cobble Mountain Reservoir, they are now submerged.

Of the natural ponds, one is on the headwaters of a tributary of Freeland Brook, and the other on Watson Brook, a tributary of Pond Brook, which in turn, is a tributary of Peeble Brook.

CITY OF SPRINGFIELD WATER WORKS BORDEN BROOK RESERVOIR DAM.

Borden Brook rises in Black Pond, two and one-half miles northwest of West Granville, thence flows northeasterly and easterly to the Cobble Mountain Reservoir. The brook is now about three miles in length and has a total drainage area of eight and one-third square miles. Formerly, before the Cobble Mountain Reservoir was constructed, Borden Brook was four and one-half miles in length and had a total drainage area of ten and one-third square miles. It joined with Peeble Brook to form the Westfield Little River, at a point about a half mile upstream from the present Cobble Mountain Dam.

The Borden Brook Reservoir dam is located about one-half mile upstream from the mouth of Borden Brook, in close proximity to the Blandford-Granville town line, at a point where the drainage area contributory is about eight square miles.

The dam is an earthen embankment about seven hundred feet in length, seventy-five feet in height, and twenty-four feet in width on its top, which carries a roadway. Both upstream and downstream slopes are one on two, they are provided with berms, and the upstream slope is paved with stone.

The overflow is located about four hundred feet south of the dam proper and is an open channel, fifty feet in width on the bottom, and provided with a concrete crest eight feet below the top of the dam.

The dam was completed in 1909 and forms a reservoir covering about two hundred and thirty acres, with a capacity of 2500 millions of gallons.

J. E. PERKINS DAM.

Peeble Brook rises in the northwest corner of the Town of Blandford and flows southeasterly through the village of North Blandford to the Cobble Mountain Reservoir, into which it empties at a point about one and one-half miles southwest of Blandford Center.

It is about six miles in length and has a total drainage area of twenty-five and three-quarters square miles.

Upstream about one mile from the mouth of the brook and just north of the highway leading from Blandford Center to Blair Pond, at a point where the drainage area contributory is ten and one-third square miles is a dam now or formerly belonging to J. E. Perkins, Blandford, Mass. To this structure were connected a grist mill and sawmill both of which went out of existence over thirty-five years ago. Little of the dam is now left, and no pondage is formed.

CITY OF SPRINGFIELD WATER WORKS DAM (WAITE BROS. DAM).

About three miles upstream from the last described dam, at a point in the brook where the drainage area contributory is three and three-quarters square miles, are the traces of a dam which formerly belonged to F. M. & B. H. Waite, North Blandford, Mass.

The height of the dam, together with the natural cascade at this point, created a head of sixty feet, and the power developed ran a card factory in which a dozen men were usually employed. The pond formed by the dam was of considerable size and known as North Meadow Pond. This pond is no longer in existence, as the property was purchased some years ago and part of the dam removed by the City of Springfield Water Works.

CHARLES A. BROWN DAM.

Birch Meadow Brook rises on the west slope of Birch Hill and flows south into the Cobble Mountain Reservoir. It is about one mile in length and has a drainage area of about one square mile.

About one-half a mile upstream from its mouth, where the drainage area is three-quarters of a square mile, is a sawmill dam belonging now or formerly to Charles A. Brown, Blandford, Mass. This is a dry stone masonry spillway structure, backed with earth, sixty feet in length and six feet in height. From its east end a canal extended to the sawmill, located about one thousand feet downstream, at a point near the highway.

The pond formed by the dam covers about four acres, and is now used as an ice pond. The canal and mill have not been in use for over forty years, and only a trace of the latter remains.

HIRAM L. BLAIR ESTATE DAM.

Pond Brook rises on the north slope of Barnes Mountain in the town of Tolland, flows northerly and easterly to Peeble Brook into which it empties at a point about one-half a mile from the mouth of the latter. Pond Brook is five miles in length and has a total drainage area of eleven and three-quarters square miles.

About two miles upstream from its mouth or about one-half mile south of Blair Pond, at a point where the drainage area contributory is six square miles, is a dam belonging now or formerly to the Hiram L. Blair Estate, Blandford, Mass. This is a dry stone masonry structure, fifty feet in length and twenty feet in height. The dam is in a dilapidated condition and backs up no water. The sawmill attached, which is now a derelict, has not been in use for over thirty-five years.

CITY OF SPRINGFIELD WATER WORKS DAM (PEEBLES DAM).

Watson Brook rises on the southwest slope of Walnut Hill, flows southeast through Blair Pond, and empties into Pond Brook at a point about one and one-half miles upstream from the confluence of Pond and Peeble Brooks. It is two and one-half miles in length and has a total drainage area of four square miles.

About one thousand feet upstream from the mouth of Watson Brook, or five hundred feet downstream from Blair Pond, at a point where the drainage area contributory is four square miles, is a sawmill dam which formerly belonged to Sylvester Peebles, Blandford, Mass., but which now belongs to the City of Springfield Water Works.

It is a dry stone masonry structure one hundred feet in length and eighteen feet in height. At its west end is located a spillway, which is twenty-five feet in length. The sawmill attached to the dam is practically all gone with only traces of it left. The penstock, which connected the dam and the mill, is filled with debris, and the spillway covered with a growth of brush. This dam is now a derelict and forms no pondage.

ARTHUR LEE DAM.

Wheeler Brook rises in a small pond just across the Blandford-Otis boundary line in the town of Otis, thence flows easterly into Blandford to Peeble Brook into which it empties at North Blandford Center. Wheeler Brook is one and three-quarters miles in length and has a total drainage area of two and three-quarters square miles.

Upstream about one thousand feet from its mouth, at a point where the drainage area is a little less than two and three-quarters square miles, is located a dam belonging now or formerly to Arthur Lee, North Blandford, Mass.

This is a dry stone spillway structure with a log crest backed with planking and earth. Its length is eighty feet and its height eight feet. From its north end water was conveyed in a canal to the carriage factory located about sixty-five feet downstream. This industry passed out of existence some years ago and the dam is now a derelict and forms no pond.

ALBERT GIBBS DAM.

About a mile upstream from the last described dam, at a point where the drainage area contributory is one square mile, is located a dam belonging to Albert Gibbs, North Blandford, Mass.

This dam was built about fifteen years ago to form an ice pond. It is a dry stone masonry spillway structure, seventy feet in length, seven feet in height and faced upstream with planking. The pond formed covers about two acres and is used as a fishing pond as well as an ice pond.

MRS. E. K. LINCOLN DAM.

This dam is located across the outlet of Long Pond at a point where the drainage area contributory is three quarters of a square mile. It belongs to Mrs. E. K. Lincoln, Blandford, Mass.

The dam is an earthen embankment, faced downstream with stone masonry, and paved upstream with cobblestones. It is two hundred and fifty feet in length and six and one-half feet in height. The spillway is located eighty feet from its west end and is of ample capacity, being seventeen feet in length.

Long Pond is a natural pond, raised by this dam built across its outlet in 1898. Its surface area is fifty-eight acres.

FRANK R. DUNLAP DAM.

Potash Brook rises in Blandford just north of Blandford Center, flows southeast into Russell and then through Russell to the Westfield River into which it empties at Woronoco. It is five and one-half miles in length and has a total drainage area of six and three-quarters square miles.

On this brook, about one mile southeast of Blandford Center, at a point where the drainage area contributory is about one-half square mile, is a dam belonging now or formerly to Frank R. Dunlap, Blandford, Mass.

The dam is divided into two parts by a short stretch of high natural ground. The western part, which is eighty-two feet in length, is built of earth paved upstream with stone, and the eastern part is built of concrete in which is located the spillway twelve feet in length. The height of the dam is thirteen feet above the bed of the brook.

The dam was built in 1914 to form a pleasure pond of eight acres for fishing, boating and bathing. The part of the dam built of earth failed some years ago and as the structure has not been rebuilt it forms no pondage.

G. F. FOWLER ESTATE DAM (FORMERLY SYLVESTER PEEBLES DAM).

On a small tributary of Potash Brook, about one mile southeast of Blandford Center, at a point where the drainage area is less than one-quarter of a square mile, is located a dam belonging, now or formerly, to the estate of G. F. Fowler, Blandford, Mass.

This structure is about one hundred feet in length and six feet in height. The spillway is towards its west end and is a corrugated pipe one foot in diameter laid through the dam. The small, shallow pond formed by the dam is used as an ice pond.

EMMA K. COWLES DAM.

Freeland Brook rises in Cochran Pond, and flows southeast and northeast through Blandford and Russell to the Westfield River into which it empties at Russell Center. It is four and one-half miles in length and has a total drainage area of eleven square miles.

Upstream one-half mile from the Blandford-Russell boundary line, and about two miles east of Blandford, at a point where the drainage area contributory is three and one-half square miles, is located a dam belonging, now or formerly, to Emma K. Cowles, Russell, Mass.

It is a log crib structure about six feet in height, located at the top of a cascade, where, with the fall in the cascade, it forms a "head" in the neighborhood of thirty-five feet. To the dam was attached a sawmill which went out of existence about thirty years ago. Part of the dam is now gone out and no pondage is formed by it.

HUNTINGTON FIRE DISTRICT DAM.

Cold Brook rises in the Town of Blandford about a mile north of Cochran Pond, and flows northerly into Hampshire County to the West Branch of the Westfield River, into which it empties at a point about one and a half miles west of the village of Huntington. The brook is about one and one-quarter miles in length and has a total drainage area of a little over one square mile.

Upstream about one-half mile from its mouth, where the drainage area is a little less than one square mile, is located the reservoir dam of the Huntington Fire District.

This dam is an earthen structure one hundred and fifty feet in length and twenty feet in height. It is ten feet in width on top, with slopes of about one on two upstream and one on one and one-third downstream. The spillway is located in the center of the dam, and is built of heavy stone masonry, faced with concrete. It is nineteen feet in length and two and one-half feet in depth below the top of the dam. Adjoining the spillway is a heavy masonry gatehouse, from which a ten inch supply pipe and a sixteen inch drain pipe extend through the dam.

The reservoir formed has a surface area of one-half acre and a capacity of about one and one-quarter million gallons.

NATURAL PONDS

BLAIR POND.

This is a natural body of water situated about two and a half miles west of Blandford Center on Watson Brook and along side of the highway leading from Blandford Center to East Otis. It has a surface area of seventy-three acres, a drainage area of three and three-quarters square miles and has no dam across its outlet. Its outlet is a culvert under the highway from Blandford to East Otis.

COCHRAN POND.

Cochran Pond is a natural body of water in which Freeland Brook, already described, rises. It is located about two miles north of Blandford Center, has a drainage area of not more than one sixth of a square mile, and, at some time in the past, had a dam about five feet in height across its outlet. This structure, however, has gone out, leaving the pond again in its natural state.

BRIMFIELD

There are twenty dams and one natural pond in Brimfield. Of the dams there are nine on the Quinebaug River and its tributaries, five on Elbow Brook, four on Blodgett Mill Brook, one on Dearth Hill Brook, and one on Woodman Brook. The natural pond is situated on East Brook, a tributary of the Quinebaug River.

The Quinebaug River rises in the town of Wales, flows easterly and southerly through the towns of Brimfield, Sturbridge, Southbridge, and Dudley into Connecticut, thence through Connecticut to join the Shetucket River which in turn finds its way into the Thames at Long Island Sound. Its total drainage area is seven hundred and twenty-five square miles, and that part in Massachusetts is one hundred and sixty-three square miles.

SNELL MANUFACTURING COMPANY DAM.

This dam is located on the Quinebaug River, in East Brimfield, at a point on the stream where the drainage area contributory is fifty-five square miles, and belongs to the Snell Manufacturing Company, Snellville, Fiskdale, Mass.

It is a low log diversion structure, eighty-five feet in length, and not over one and one-half feet in height, built at the top of a series of ledge cascades that create a considerable fall at this point. Because of the low height of the dam and the small pondage formed thereby, should it fail, no damage should result from the released water.

The Snell Manufacturing Company made augers and bits, in which business a considerable number of hands were employed. The establishment, however, was shut down about fifteen years ago, and the business moved to Snellville, a place between the village of Fiskdale and Sturbridge Center.

SPRINGFIELD BOYS CLUB DAM NO. 1.

About three miles upstream from the Snell Manufacturing Company dam, last described, and one and one-half miles southeast of Brimfield village, where the drainage area contributory is about twenty-three and one-half square miles, is a dam belonging to the Springfield Boys Club. This dam is a concrete spillway structure fifty feet in length and about three feet in height. It was built in 1930 and forms a small pleasure pond of not over one-half million gallons capacity. It may be stated here that the stretch of the Quinebaug River through the town of Brimfield is known as Mill Brook.

CAMPBELL DAM (FORMERLY LOWELL WILCOX DAM).

About two miles upstream from the Springfield Boys Club dam No. 1 and about one-half mile southwest of Brimfield Center, where the drainage area contributory is six and one-quarter square miles, is a dam belonging to B. E. Campbell, Brimfield, Mass.

The structure was built in 1812, and the power developed thereby ran a sawmill and a gristmill. The dam carries a highway on its top, and is an

earthen embankment faced with dry stone masonry up and downstream. Its height is thirteen feet, and the crest of the spillway is five feet below the top of the dam. The length of the dam is four hundred feet, the length of the spillway twenty-four feet and the pond formed about fifteen acres in area.

The sawmill is still a going concern, but the gristmill, which was at the opposite end of the dam, has not been in use for years. Through the dam are two penstocks, one which conveys water to the sawmill, and the other which conveyed water to the gristmill.

When the dam was built in 1812, the spillway crest was five feet below the top of the dam as at present, but afterwards the crest was raised somewhat for the purpose of increasing the fall and creating more storage. In the phenomenal rainstorm which occurred on March 18, 1936, the pond raised and caused a washout in the embankment. Following the flood, the dam was repaired, and the spillway crest restored to its former level, with provision made for the use of movable flashboards 2 feet in height.

SPRINGFIELD BOYS CLUB DAM NO. 2.

On Stonage Meadow Brook, which rises at the foot of Mt. Wache Oueche and flows southerly joining the Quinebaug River a short distance upstream from the Springfield Boys Club dam No. 1, is located a second dam belonging to the Springfield Boys Club. This dam was formerly known as the Lombard dam.

It is located about two hundred and fifty feet north of the state highway leading from Brimfield Center to East Brimfield, at a point where the drainage area contributory is about one and one-half square miles.

The dam is an earthen structure faced on the downstream side with dry stone masonry. It is seventy-five feet in length and fifteen feet in height. From its west end a dike six feet in maximum height extends northerly three hundred and fifty feet. This dike formed the west side of the mill pond. There is no pondage being formed now as the spillway, twenty-five feet in length, was breached to make a free water way through the dam. The sawmill attached to the dam went out of service for good over fifty years ago, and only traces of it are left.

MRS. FRANK CLOUGH DAM.

On a small tributary of Hollow Brook (described under Wales) from the west, on the westerly side of the highway leading from Brimfield to Wales is a sawmill dam which was built and formerly owned by the Grove Brothers of Brimfield, but is now owned by Mrs. Frank Clough of Palmer, Mass.

It is an earthen embankment, faced with stone on the down stream side. It is about one hundred and twenty feet in length and twenty-one feet in height. The structure is now a derelict with a free water way through it. The sawmill, attached to the dam ceased to operate over fifty-five years ago and only traces of the building can now be found. The drainage area contributory to this dam is, apparently, less than one-half a square mile.

W. B. CHENEY DAM.

This structure is located in the very northeast corner of the town of Brimfield, on a tributary of the Quinebaug River that flows through Long Pond in Sturbridge and empties into the Quinebaug about a mile downstream from East Brimfield.

The dam forms what is known as Baker Pond, which covers about ten acres. It has a drainage area contributory of two and one-half square miles and belongs to W. B. Cheney, Brimfield, Mass.

The structure is an earthen embankment one hundred and ninety feet in length and twenty feet in height. It is faced on both sides with dry stone masonry. The spillway is not connected with the dam, but is located about three hundred feet away from its northeast end in natural ground. The old mill attached, which apparently was a sawmill, has long since gone out of existence with only traces of the foundations left.

LITTLE ALUM POND DAM.

This structure is built across the outlet of Little Alum Pond, said outlet being a tributary of the Quinebaug River, into which it empties at East Brimfield. The outlet is about two miles in length, and has a total drainage area of one and one-third square miles. Little Alum Pond is located one and one-half miles north of East Brimfield, has a surface area of sixty acres and a drainage area of three-quarters of a square mile.

While every effort was made to trace the ownership of this property nothing definite was ascertained. Among those who appear to have some interest in the property are the old Quinebaug Reservoir Co. or its successors and, also, George Macallister of Hartford, Connecticut and William Dupre of East Brimfield. The two latter claiming the control of the dam.

The dam is an earthen embankment about one hundred feet in length and nine feet in height. The spillway is in the center of the dam.

Evidently the pond was a natural body of water which was raised by the dam. At one time there was a grist mill attached but this was abandoned as far back as 1833.

E. H. MORGAN DAM NO. 1.

East Brook rises in the southeast part of the town of Warren (Worcester County) and flows southwesterly through Brimfield to Mill Brook, which it joins about a half a mile south of Brimfield Center. It is three and one-half miles in length and has a total drainage area of six square miles.

Upstream about two miles from its mouth, at a place called "Little Rest", where the drainage area contributory is three and three-quarters square miles, is located a dam belonging now or formerly to E. H. Morgan, Brimfield, Mass.

It is an earthen embankment with dry stone facing up and downstream, one hundred and twenty feet in length and eight feet in height. The structure is not now in use, as an opening has been made through the dam for the free discharge of the brook.

The plant connected with this dam, in the past, made Hames and Shoe Nails, and it was here that the Concord Hames were first made. The plant, however, ceased operating years ago, and only traces of it remain.

E. H. MORGAN DAM NO. 2.

About six hundred feet upstream is dam No. 2, which also was owned by the E. H. Morgan above mentioned. To this dam a sawmill and a gristmill were attached until about thirty-five years ago, when both mills were abandoned. The dam is an earthen embankment about one hundred and ten feet in length and twenty feet in height. Like the last described dam an opening was made through it for the free discharge of the brook.

Some fifty years ago the establishments attached to both dams employed a number of hands and made the place a very busy little center, hence the place name "Little Rest".

M. A. GOETZ DAM.

Elbow Brook rises on the west slope of Mt. Hitchcock in the town of Monson, then flows northeast into Brimfield, and through Brimfield, to the Quaboag River, into which it empties near the east end of the Monson-Palmer boundary line. Elbow Brook is four miles in length and has a total drainage area of ten square miles.

At a point about one-half a mile from its mouth, where the drainage area contributory is eight and one-third square miles, is located a dam belonging now or formerly to M. A. Goetz, Palmer, Mass. The dam is a small concrete structure, which diverts the brook water into a partly excavated basin used as an ice pond. The dam is not more than thirty feet in length, and is only three feet in height.

Since it backs up little water, and practically forms no pond, even though it suddenly collapsed, no damage would result.

F. F. ISAACS ESTATE DAM.

Upstream about three-quarters of a mile from the M. A. Goetz dam, last described, on the south side of the road leading from Palmer to Brimfield, at Parkville, so-called, where the drainage area contributory is six and one-half square miles, is a dam belonging to F. F. Isaacs Estate, Palmer, Mass.

The dam is three hundred and fifty feet in length and ten feet in height. The spillway, which is forty feet in length, is located about one hundred and twenty feet from its east end. About fifteen years ago it was rebuilt of masonry backed with gravel, and is a solid piece of work. At each end of the spillway, next to the abutment, is laid a penstock through the embankment. The one on the west end served a sawmill, and the other on the east end, a gristmill.

Both of these plants, however, ceased operating about thirty-five years ago and now only traces of the buildings remain. The pond formed is about three and a half acres in area and is used as a pleasure pond.

HUMPAGE DAM (RALPH P. ANDERSON DAM).

About one-half mile upstream from the Isaacs dam at a place called Dingley Dell, where the drainage area contributory is three and one-third square miles, is located a dam belonging now to F. R. Humpage, Palmer, Mass. and formerly to Ralf P. Anderson, Port Jefferson, L. I., New York.

It is a dry stone masonry spillway structure backed with earth which forms a pond not over one-half an acre in area. The pond is used for pleasure purposes, and until a short time ago was also used for developing power to run a small private hydro-electric plant.

The dam is ninety feet in length and thirteen feet in height built on a ledge foundation.

MASS. DEPARTMENT OF CONSERVATION DAM NO. 1.

About one and one-half miles upstream from the Humpage dam, and less than a thousand feet from the Brimfield-Monson town line, where the drainage area contributory is one and one-tenth square miles, is located a dam owned by the State of Massachusetts, Department of Conservation.

The dam is an earthen structure one hundred and fifty feet in length, twenty-two feet high and twelve feet in width on top, with slopes of one on three upstream and one on two downstream. A reinforced concrete core wall dowelled into ledge rock, extends through the whole length and to the full height of the dam. The overflow or spillway is built of heavy stone masonry and is nineteen feet in length with its crest five and one-half feet below the top of the dam.

The dam was built in 1937 to form a recreation and fishing pond of about twelve acres in the Brimfield State Forest.

CHARLES H. KAPLINGER DAM.

On a tributary which joins Elbow Brook about a mile upstream from the Humpage dam is a dam belonging now or formerly to Charles H. Kaplinger, Springfield, Mass. It is located about five hundred feet from the mouth of the tributary, at a point where the drainage area is one-half a square mile.

The structure is an earthen embankment one hundred and twenty feet in length and ten feet in height, with a concrete spillway ten feet in length at its south end. The spillway however, failed some time ago, making practically a free passage-way for the brook.

MASS. DEPARTMENT OF CONSERVATION DAM NO. 2.

Dearth Hill Brook, a tributary of Elbow Brook, rises on the west slope of Mt. Hitchcock in the town of Wales and flows northerly and westerly through Brimfield, joining Elbow Brook about a half mile upstream from the village of Parksville. It is about three miles in length and has a total drainage area of about two and three-quarters square miles.

Upstream about one and one-quarter miles from the mouth of the brook, at a point where the drainage area contributory is one and three-quarters square miles, is a dam belonging to the State of Massachusetts, Department of Conservation.

The dam is located in the Brimfield State Forst, and was built in 1933-34 to form a recreation and fishing pond about two acres in area, which is known as Dearth Hill Pond. It is an earthen structure about one hundred feet in length, nine feet in height and twenty feet in width on top. The dam is provided with two masonry surface overflows, each eight feet in length and two and one-half feet in depth, one located near the middle of the structure, and the other at the east end.

MASS. DEPARTMENT OF CONSERVATION DAM NO. 3.

Upstream about one mile above the last described dam, and within a short distance of the Brimfield-Wales town line, where the drainage area contributory is a little over one square mile, is located another dam owned by the State of Massachusetts, Department of Conservation.

The dam is made up of two earthen embankments separated by a rise or knoll of natural ground, the easterly section being one hundred and fifty feet in length and the westerly section three hundred and twenty feet in length. The maximum height is about twelve feet and the top width of the dam, which carries the highway, is forty feet. There are two surface overflows in the dam, one a rectangular concrete culvert eight feet in width and four feet in depth below the top of the dam, and the other a wood stop-plank arrangement four feet in width.

The dam was built in 1934-35 and forms a recreation and fishing pond about seven acres in area, which is known as Woodman Pond.

ERNEST G. ROBERTS DAM (FORMERLY BRIMFIELD BRICK CO. DAM NO. 1.)

Blodgett Mill Brook rises in Worcester County, two miles southeast of Warren Center, flows southwesterly, northwesterly and again southwesterly, to the Warren-Brimfield boundary line, thence through Brimfield to the Quaboag River, into which it empties near West Brimfield. The brook is six miles in length and has a total drainage area of seven and one-half square miles.

About seven hundred feet upstream from its mouth, at a point where the drainage area contributory is practically the total drainage area of the brook or seven and a half square miles, is a sawmill dam belonging now to Ernest G. Roberts, R.F.D. No. 1, Palmer, Mass. and formerly to the Brimfield Brick Co., Brimfield, Mass.

It is a dry stone masonry spillway structure backed on the upstream side with planking and gravel fill. It is about ninety feet in length and nine and a half feet in height.

The spillway is twenty-five feet in length, with its crest two and a half feet below the top of the dam. The sawmill, attached, which operated until a year or so ago, is located near the north end of the dam. A gated penstock about thirty feet in length is laid from the dam to the mill.

The pond formed by the dam formerly covered about three-quarters of an acre, but, because of the removal of some of the wood planking on the dam and the silting up of the pond, there is little or no water backed up at present.

W. C. MOULTON DAM (FORMERLY BRIMFIELD BRICK CO. DAM NO. 2).

Upstream fifteen hundred feet or thereabouts from the last described dam, at a point where the drainage area is about seven and a quarter square miles, is a dam belonging to W. C. Moulton and formerly to the Brimfield Brick Co.

It is a small diversion dam, which turns water into a canal four hundred feet in length, which runs parallel to and on the north side of the brook. From the end of this canal a pressure penstock, two hundred feet in length, is laid down the slope to the wheel house of the brick-making plant, located on the flat below.

This diversion dam, which is a spillway structure built of heavy timber planking, is fifty feet in length and nine feet in height. The spillway is twenty-five feet in length with its crest two feet below the top of the dam. Because of the removal of some of the wood planking from the dam, there is no pondage formed at present.

W. C. MOULTON DAM (FORMERLY BRIMFIELD BRICK CO. DAM NO. 3).

Upstream about two hundred and fifty feet from the last described, dam at a point where the drainage area contributory is about seven and a quarter square miles, is a dam belonging to W. C. Moulton and formerly to the Brimfield Brick Co.

It is a spillway structure one hundred and twenty-five feet in length and twelve feet in height built of dry stone masonry backed with gravel and planking. The length of the spillway is thirty-seven feet and its crest is two and one-half feet below the top of the dam.

The south abutment wall of the spillway above the crest is built of concrete, while the north abutment wall is built of planking. At a point southerly from the southerly end of the spillway, is a three foot drain or sluice-way ten feet in depth with its sides planked and a sluice gate at its head. This sluice way allows the storage to be drawn upon in time of low water. The dam was built solely for the purpose of forming storage for the two dams downstream, and the pond has an area of about four acres.

I. D. FARRER DAM.

About three-quarters of a mile upstream from the last described dam and very near the Brimfield-Warren boundary line, where the drainage area is six and three-quarters square miles, is a dam belonging now or formerly to I. D. Farrer, Brimfield, Mass.

It is a dry stone masonry structure backed with earth and forms a pond which covers about five acres. The dam is sixty-six feet in length, twelve feet in height, and carries the highway on its top. The spillway is twenty-four feet in length and is located under the highway bridge in the middle of the structure. To this dam there were formerly attached a sawmill and a gristmill, both of which have been abandoned for years.

NATURAL PONDS

GREAT POND.

Great Pond is a natural body of water situated about three-quarters of a mile north of Brimfield Center on East Brook, which is a tributary of the Quinebaug River into which it empties about one-half mile south of Brimfield Center. East Brook is three and one-half miles in length and has a total drainage area of six square miles. The drainage area of Great Pond is five and one-third square miles, and its surface area covers about fifty acres. There is no dam across its outlet.

C H E S T E R

In the town of Chester there are thirteen dams and one natural pond, three of these dams are on the Middle Branch of the Westfield River, four on the west branch of the Westfield River, four on Walker Brook and two on Austin Brook, while the natural pond is on a tributary of the west branch of the Westfield River.

ERNEST L. ALDERMAN DAM.

*(October 20, 1953 - Tel. conversation with Engr. McDonald
present owner is Harry O. Eastman.)*

The Middle Branch of the Westfield River rises in the northern part of the town of Peru, flows southeasterly through the towns of Middlefield, Worthington and Chester to the East Branch of the Westfield River, which it joins about three-quarters of a mile upstream from Norwich Bridge. It is about nineteen miles in length and has a total drainage area of fifty-three square miles.

Ascending the stream, the first dam on this branch of the Westfield River, is located two and one-half miles from its mouth, at a place known as Littleville, where the drainage area contributory is forty-nine square miles, and belongs to Ernest L. Alderman, Huntington, Mass.

The dam is divided into two parts by a high rock located in the middle of the stream. It is a log crib spillway structure laid on ledge, planked on the upstream side and backed with earth. The length of the spillway is one hundred and twenty feet and the height ten feet. To the dam is attached a sawmill which is a going concern. The pond is silted in to a considerable extent so that very little water is stored.

A. F. PIERCE DAM.

About one and one-half miles upstream from the Alderman dam, last described, at a place known as Dayville, where the drainage area contributory is forty-seven square miles, is located a dam belonging to A. F. Pierce, Huntington, Mass.

The dam is a log crib spillway structure planked upstream and backed with earth. It is one hundred and fifteen feet in length between abutments, nine feet in height, and diverts water into a canal that connects with a sawmill some hundreds of feet downstream. The sawmill, which turned out chair stock, was destroyed by fire in 1932 but has been rebuilt and is again in operation.

The dam forms only a small pond and, consequently, in case of failure no material damage would result by released water.

DAY DAM.

This is a pleasure and ice pond dam located in North Chester about three miles upstream from the last described dam, at a point where the drainage area is thirty-seven square miles, and belongs to Mrs. Adra L. Day, Huntington, Mass.

It is a timber spillway structure, eighty-five feet in length between abutments and five feet in height. It was built in 1930. The pondage formed is small and, if suddenly released by failure of the structure, no damage would result.

ABRASIVE MINING & MANUFACTURING COMPANY DAM.

The west branch of the Westfield River rises in the town of Washington, flows southeasterly through the towns of Becket, Chester and Huntington, where it joins the Westfield River at Huntington Center. It is twenty-two miles in length and has a total drainage area of ninety-six square miles.

Upstream three miles from its mouth, where the drainage area contributory is eighty-seven square miles, is a dam now or formerly, belonging to the Abrasive Mining & Manufacturing Co., Chester, Mass.

The dam is a log crib spillway structure one hundred feet in length and six feet in height. It failed many years ago, when its central part collapsed during a flood flow, and has not been repaired since. It forms no pondage now.

JACKSON MILLS EMERY COMPANY DAM.

About three and one-half miles upstream from the dam last described at a point about one-half mile downstream from Chester Center, where the drainage area contributory is seventy-three square miles, is a dam now or formerly belonging to the Jackson Mills Emery Company. This dam is practically all gone out, and only traces remain of the mill which was attached thereto.

CHESTER ELECTRIC LIGHTING COMPANY DAM.

Upstream three-quarters of a mile from the dam last described, in Chester Center, at a point where the drainage area contributory is fifty-four square miles, was a dam which formerly belonged to the Chester Electric Lighting Company. It was only a low structure, built of loose stone across the stream for the purpose of turning water into the canal that led to the hydro-electric station. This station was dismantled a few years ago and the dam abandoned.

HAMILTON EMERY & CORUNDUM COMPANY DAM.

About two thousand feet upstream from the Chester Lighting Company dam, last described, at a point where the drainage area contributory is fifty-three square miles, is located a dam belonging, now or formerly, to the Hamilton Emery & Corundum Company.

It is a low log crib spillway structure, planked upstream, eighty-five feet in length and nine feet in height and diverts water into a canal connected with the Hamilton factory, located six hundred feet downstream.

The pond formed by the dam is small and, in case of failure of the structure, no material damage would result from the released water.

HUDSON CHESTER EMERY MILLS DAM NO. 1.

Walker Brook rises in the town of Becket one and one-quarter miles west of Becket Center, flows southeast and north east to Chester Center where it joins the west branch of the Westfield River. It is nine miles in length and has a drainage area of eighteen square miles.

Near its mouth in Chester Center, at a point where the drainage area contributory is practically the total drainage of the brook, that is, eighteen square miles, is a dam belonging, now or formerly, to the Hudson Chester Emery Mills. It is a post deck wood structure, laid on a ledge foundation, one hundred feet in length and six feet in height. The power developed ran a bedstead factory which ceased operating years ago. The structure is in a dilapidated condition with its central part gone out, thus allowing free flowage of the stream.

NELSON & RICE TANNERY DAM.

About five hundred feet upstream from the Hudson Chester Emery Mills dam last described, at a point where the drainage area contributory is practically eighteen square miles, was located a dam that belonged to Nelson & Rice and to which was attached the Nelson & Rice Tannery.

The tannery was shut down for good about thirty years ago. At the same time the dam was abandoned and only traces of it now remain.

WESTFIELD NATIONAL BANK DAM (FORMERLY THEODORE STEINHART DAM).

Upstream a distance of eight hundred feet from the tannery dam, last described, at a point where the drainage area contributory is seventeen and three-quarters square miles, is located a dam belonging to the Westfield National Bank and formerly to Theodore Steinhart of Chester, Mass.

It is an old log crib structure backed with earth, sixty feet in length and twenty feet in height. Attached to it is a gristmill, which operated until about fifteen years ago, when it shut down for good. The dam has since deteriorated so that at present only the foundations remain and there is no pondage formed.

HUDSON CHESTER EMERY MILLS DAM NO. 2.

About fifteen hundred feet upstream from the dam last described, at a point where the drainage area is seventeen and one-half square miles, is located another dam belonging, now or formerly, to the Hudson Chester Emery Mills.

This is a log crib spillway structure one hundred and ten feet in length and ten feet in height. It was abandoned some twenty years ago, and, because of its deterioration since then, holds back no pondage now. The mill attached thereto was shut down for good some twenty-five years ago.

TOWN OF CHESTER FIRE DISTRICT DAM NO. 1.

On Austin Brook, which is a tributary of Walker Brook into which it empties a short distance above the Hudson Chester Emery Mills dam No. 2, last described, is a dam belonging to the town of Chester.

It is located about one-half of a mile upstream from the mouth of the brook, at a point where the drainage area contributory is one and one-quarter square miles. The structure forms the very small Intake Reservoir from which the water is drawn that supplies the Fire District of Chester.

The dam is built of stone masonry, is about sixty-five feet in length and twelve feet in height. The spillway, which is eighteen feet in length, is in the middle of the dam.

TOWN OF CHESTER FIRE DISTRICT DAM NO. 2.

Upstream seven hundred and fifty feet from dam No. 1, last described, at a point where the drainage area contributory is about one square mile, is located dam No. 2, of the Chester Fire District.

This dam is a cement concrete structure laid on a ledge foundation, and was built in 1931 to form a water supply storage reservoir. It is one hundred and thirty feet in length and fourteen feet in height, with a spillway section about fifty feet in length at its southerly end. The reservoir formed by the dam is a small one, being only about one-half an acre in area.

NATURAL PONDS

ROUND HILL POND.

This is a natural pond located about one and one-half miles south of Chester, on Round Top Mountain, so-called. The outlet of the pond is a tributary of the west branch of the Westfield River into which it empties at a point about one and one-half miles downstream from Chester Center.

The surface area of the pond is less than ten acres and the drainage area about one-tenth of a square mile. There is no dam across its outlet.

CHICOPEE

There are thirty-two dams in the City of Chicopee. Ten of these are on tributaries of the Chicopee River from the south, thirteen on tributaries from the north, and three on Willimansett Brook, a tributary of the Connecticut River. The remaining six are on the Chicopee River proper and are described under Chicopee River Dams. There are no natural ponds in Chicopee.

M. SITNICH DAM.

On a tributary of the Chicopee River into which it empties from the south, at a point near the Riverview Terrace five hundred feet north of Fairview Ave., where the drainage area is not over one-quarter of a square mile, is located an ice pond dam, now or formerly belonging to M. Sitnich, Chicopee, Mass.

The dam is an earthen embankment three hundred and ten feet in length and fourteen feet in height. It has'nt been in use, nor has it formed any pondage for some years, and the pond basin is being filled in with earth.

CITY OF CHICOPEE (ELECTRIC LIGHTING DEPARTMENT DAM).

On Dingle Brook, a small tributary of Chicopee River, into which it empties from the south, is a dam belonging to the City of Chicopee (Electric Lighting Department). It is located about three hundred feet upstream from the mouth of the brook at a point near Front Street, where the drainage area of the brook is one and one-half square miles.

The dam is an earthen embankment one hundred and five feet in length and about eleven feet in height. For a number of years this structure had been abandoned, with a free water way through it, but in 1937 it was rebuilt and put in service again. The overflow is a five foot diameter brick culvert.

The dam forms a small pond about one-quarter of an acre in area which furnishes water to the municipal electric station.

CITY OF CHICOPEE PARK DEPARTMENT DAM (FORMERLY BEMIS DAM).

Upstream on Dingle Brook about five hundred feet from the last described dam, and three hundred feet south of Front Street, at a point where the drainage area is one and one-half square miles, is located a dam owned by the City of Chicopee (Park Department).

This dam, which was owned until 1936 by Edward Bemis and formed the Bemis Ice Pond, has been overhauled and strengthened during the present year by the new owner, and the pond and surrounding property converted into a municipal recreation park.

The dam is an earthen embankment about three hundred and fifty feet in length, twenty-seven feet in height and ten feet in width on top, with slopes of one on three upstream and one on two downstream. At the easterly end of the structure is a reinforced concrete overflow channel, ten feet in width and about one hundred and twenty feet in length, with its crest seven feet below the top of the dam. The dam was originally built about seventy-five years ago, and the pond formed, which covers about twenty-four acres, had always been used as an ice pond.

FAIRVIEW CEMETERY DAM.

On a small tributary of Dingle Brook from the west, at a point about fifty feet north of the Chicopee-Springfield town line, is located a dam belonging to the Fairview Cemetery Association. Its location is within the grounds of the cemetery at a point where the drainage area contributory is less than a quarter of a square mile.

The dam is an earthen embankment about one hundred and forty feet in length, thirteen feet in height, and eight feet in width on top, with side slopes of two to one. From the southerly end of the dam a low earthen dike, about three feet in height and one hundred and forty feet in length, extends at right angles with the dam.

The dam was built years ago and formed a small pond from which water was pumped by a hydraulic ram up to the higher cemetery grounds. About a quarter of a century ago, however, the dam was breached and, since that time, there has been no pondage formed.

J. T. PROSSER DAM NO. 1.

A small tributary of the Chicopee River from the south, rises in Chicopee Falls near the Chicopee-Springfield boundary line, and flows westerly through Chicopee Falls to the Chicopee River. It is about a mile in length and has a drainage area of about one square mile.

At a point about one thousand feet upstream from its mouth, where the drainage area is not over a half a square mile, is located a small concrete dam, now or formerly belonging to J. T. Prosser, Chicopee, Mass. It is fifty feet in length and about five feet in height. The structure is apparently abandoned, with a free water way through it, and consequently forms no pondage.

J. T. PROSSER DAM NO. 2.

About four hundred and fifty feet upstream from the last described dam at a point, where the drainage area is somewhat less than a half a square mile, is a second dam belonging to J. T. Prosser. This is also a small concrete dam sixty feet in length and six feet in height, with notched overflow in the center.

It forms a small pleasure pond less than one-tenth of an acre in area.

J. STEVENS ARMS COMPANY DAM.

About two hundred feet upstream from the Prosser dam No. 2 last described, at a point where the drainage area is practically the same as that contributory to the Prosser dam No. 2, is a dam belonging to the J. Stevens Arms Company of Chicopee Falls, Mass.

The dam is an earthen embankment faced on its downstream side with brick masonry. It is about seventy feet in length, eighteen feet in height and nine feet in width on its top. Through the structure, at a point about three feet above the bed of the brook, is laid a wrought iron waste pipe two feet in diameter, controlled by a head gate located in a well at the upstream toe of the dam. This pipe regulates the height of the water in the pond. Besides, there is a spillway in the center of the dam, three feet in length and one and one-half feet in depth. Very seldom, if at any time, does water pass over this spillway, as the discharge from the pond is conveyed through the waste pipe. Moreover, the flow of the brook into the pond is under control and so regulated that flood water is diverted

into another waterway before it reaches the pond. The area of the pond is about half an acre and it is used as a private supply for process purposes etc., at the J. Stevens Arms Company Mills.

CHICOPEE MFG. COMPANY DAM.

Upstream at a point about two thousand feet from the Stevens Arms Co. dam last described, where the drainage area is not over a quarter of a square mile, is a small dam, now or formerly, belonging to the Chicopee Mfg. Co. It is an earthen structure about two hundred and fifty feet in length and seven feet in height.

The pond formed by the structure covers one-third of an acre, more or less, and has been used for drinking and process water. The overflow is located at or near the center of the dam, is ample in size and built of masonry.

OXFORD GOLF CLUB DAM NO. 1.

Poor Brook is a small tributary of the Chicopee River, into which it empties from the south at a point a mile downstream from the Bircham Bend Power Company dam. On this tributary, about one thousand feet from its mouth, at a point, where the drainage area contributory is about one and three-quarters square miles, is a dam belonging to the Oxford Golf Club.

It is an earthen embankment about one hundred feet in length and seven feet in height.

The pond formed by the dam is used as a pleasure pond and, since, it is very small and practically on the bank of the Chicopee River, should the dam fail no damage would result from the released water.

OXFORD GOLF CLUB DAM NO. 2.

About six hundred feet upstream from the last described dam, at a point on the east side of East Main Street, where the drainage area contributory is a little less than one and three-quarters square miles, is located a second dam belonging to the Oxford Golf Club. It is an earthen embankment one hundred feet in length, twelve feet in height, and nine feet in width on top. The dam contains a surface spillway of wood planking, eight feet in width and two and one half feet below the top of the dam. There is also a 12 inch drain pipe laid through the dam.

The pond formed covers about one-half an acre and is used as a pleasure pond.

JOHN WYSZATYCKI ESTATE DAM NO. 1.

Crowfoot Brook rises in Chicopee near the corner of Montgomery Street and Granby Road, so-called, thence flows northwesterly and southerly a distance of three and one-half miles to the Chicopee River into which it empties. Its total drainage area is about two and one-half square miles.

On the head waters of the brook about seventy-five feet east of Montgomery Street, at a point where the drainage area contributory is not over one quarter of a square mile, is located an ice pond dam belonging to the estate of John Wyszatycki, Montgomery Street, Willimansett, Mass.

It is an earthen embankment one hundred and fifty feet in length and fifteen feet in height above the streambed. The pond formed covers about an acre and a quarter, and is connected with the pond next described by an open channel.

JOHN WYSZATYCKI ESTATE DAM NO. 2.

About three hundred feet north of the last described dam and fifty feet east or upstream from Montgomery Street, is located on a very small tributary of Crowfoot Brook, another small ice pond dam belonging to the estate of John Wyszatycki.

It is an earthen embankment one hundred and eighty-five feet in length and fourteen feet in height. The pond formed covers about three-quarters of an acre, and overflows through a wooden sluiceway and a swale. As above stated these two Wyszatycki ponds are connected by an open channel.

CITY OF CHICOPEE WATER WORKS DAM.

On the headwaters of Crowfoot Brook, about five hundred feet to the south of the Wyszatycki dam No. 1, above described, and seventy-five feet west of Montgomery Street, at a point where the drainage area contributory is a little over one-quarter of a square mile, is located a small dam belonging to the City of Chicopee Water Works.

The pond formed by this structure was the source of the water supply of Willimansett, but has not been used for that purpose for a considerable number of years. After the pond was abandoned as a source of water supply, it was drawn off for good and the dam allowed to become a derelict.

LUCIEN LEMIEUX DAM.

On a very small tributary of the Chicopee River into which it empties from the north, at a point a short distance upstream from the Davitt Memorial Bridge at Chicopee Center, where the drainage area contributory is one-eighth of a square mile, is an ice pond dam belonging to Lucien Lemieux, Granby Road, Chicopee, Mass.

It is an earthen embankment one hundred and thirty-eight feet in length and twenty-six feet in height containing a clay core four feet in thickness between two lines of wood sheathing.

The dam, when originally built, about twenty-five years ago, was of lighter section and the overflow was a twelve inch pipe extending through the embankment. In 1936 the dam was materially overhauled and strengthened by the placing of additional fill on the downstream side to give a slope of one on two and one-half. At the same time the 12 inch pipe overflow was sealed and a new concrete surface spillway, five feet in width, was provided at the westerly end of the dam.

The pond formed by the dam covers about two and one-half acres.

LAWRENCE FORTIER DAM.

On another small tributary of the Chicopee River, into which it empties from the north, at a point about five hundred feet upstream from the Davitt Memorial Bridge crossing the Chicopee River at Chicopee Center, is a dam, now or formerly, belonging to Lawrence Fortier, 11 Helen Avenue, Chicopee, Mass. The dam is located about two thousand feet upstream from the mouth of the tributary, at a point where the drainage area is less than one-quarter of a square mile.

It is an earthen embankment faced upstream with a concrete wall eighteen inches in thickness. The dam is one hundred and twenty-five feet in length, eight feet in height and thirty feet in width on top, which carries a private roadway. The waste water from the pond is discharged by a sixteen inch pipe laid through the foundation, and by a swale provided at one end of the structure.

The pond formed is a shallow one about an acre in area. It was formerly used as an ice and pleasure pond, but in recent years the drainpipe in the dam has been kept open so that little or no pondage is formed.

CHICOPEE MANUFACTURING COMPANY DAM NO. 2.

Hearthstone Quarry Brook is a small tributary of the Chicopee River, which rises about one mile northwest of Chicopee Falls and flows southeasterly, entering the river about two thousand feet downstream from the Chicopee Mfg. Co. Dam No. 1, described under Chicopee River Dams.

About fifty feet upstream from the mouth of the brook, where the drainage area is less than a square mile, is located a dam built in 1930 by the Chicopee Manufacturing Company, Chicopee Falls, Mass. to form a storage reservoir. It is a rubble concrete gravity structure backed downstream with earth, about twenty-two feet in maximum height and eighty feet in length. The thickness at the base of the rubble concrete is thirteen feet and at the top five feet.

The dam rests upon a ledge foundation and forms a pondage of about six hundred thousand gallons. The overflow is a concrete channel in the center of the dam.

Because of the small storage formed and its proximity to the river, should the structure fail, no damage would result from released water.

F. X. DESMARAIS DAM.

About half a mile upstream from the Chicopee Mfg. Co. dam last described, at a point where the drainage area is about one-quarter of a square mile, is an ice pond dam belonging to F. X. Desmarais, Worthington Street, Aldenville, Mass.

The dam is an earthen embankment one hundred and eighty-two feet in length, nineteen feet in height, and eight feet in width on top.

The overflow was a pipe or culvert extending through the embankment, and in 1932 the County recommended that an additional surface overflow be provided. Before this was done, however, an extremely high flood flow which occurred in March 1933, topped and washed away a section of the dam, so that at present there is a free waterway through the structure and no pondage is being formed.

HAMPDEN BLEACHERY DAM.

On another small tributary of the Chicopee River, into which it empties from the north, at a point about seven hundred feet upstream from the iron bridge crossing the Chicopee River at Chicopee Falls, is a dam belonging to the Hampden Bleachery Co., Chicopee Falls, Mass. This structure is located about five hundred feet north of Sheridan Street, between Patrick and Dewey Streets in Chicopee Falls, at a point in the brook where the drainage area contributory is about one-half a square mile.

It is an earthen embankment about two hundred and twenty-five feet in length, twelve feet in height and faced upstream with a concrete wall one foot in thickness. The spillway or overflow, located near the west end, is five feet in length and built of concrete. The discharge over the spillway crest is into an open concrete channel connected to a large culvert that crosses under the highway below. The pond formed by the dam covers about an acre and the water is used for washing purposes in the bleachery.

MRS. JOHN H. ASHE DAM.

Upstream about a half a mile from the Hampden Bleachery dam last described, and about five hundred feet west of the Chicopee Water Works standpipes, at a point where the drainage area is not over a quarter of a square mile, is a dam belonging to Mrs. John H. Ashe, 500 Montgomery Street, Chicopee Falls, Mass.

It is an earthen embankment one hundred and thirty feet in length and about twenty feet in height. The spillway is a brick well, built in the face of the dam from which a sixteen inch pipe is laid through the foundation to a point below the toe of the structure.

The dam has not formed any pondage since 1934, when an opening was made through it for the free passage of the brook.

LOUIS SLATE DAM.

A small tributary of the Chicopee River rises near the junction of Fuller Road and Sheridan Street in Chicopee and flows southerly on the easterly side of Sheridan Street, a distance of about one and a quarter miles to the Chicopee River. The drainage area of this brook is not over a square mile. At a point about three thousand feet from its mouth, where the drainage area contributory is less than a half a square mile, is located an ice pond dam belonging to Louis Slate of Fuller Road, Chicopee Falls, Mass.

It was built in 1926 and is an earthen embankment with a concrete core one foot in thickness. It is sixty-five feet in length, nine feet in height and six feet in width on top. At the east end of the dam is a concrete spillway, three feet in length, with its crest two and one-half feet below the top of the embankment. The pond formed by the dam is very small and should the structure fail no damage would result from released water.

CITY OF CHICOPEE WATER WORKS DAM NO. 1.

Coolley Brook rises in the town of Ludlow, about three miles west of Ludlow Center, and flows southwesterly through Chicopee to the Chicopee River, which it enters at a point about one and a quarter miles downstream from the Bircham Bend Power Company dam.

The brook is about four miles in length and has a total drainage area of about five square miles. There are three dams on this brook and its tributaries, all of which form storage reservoirs for the City of Chicopee Water Supply.

The first of these dams forms a reservoir three and one-half acres in area, and is located about three-quarters of a mile upstream from the mouth of the brook, at a point where the drainage area contributory, is around four and one-half square miles. It is a composite structure built of earth and concrete, about one hundred and sixty feet in length and twelve and one-half feet in height. A concrete surface overflow, twenty-one feet in length and with its crest two and one-half feet below the top of the dam, is located at the east end of the structure.

CITY OF CHICOPEE WATER WORKS DAM NO. 2.

About one thousand feet upstream and, at the north end of the reservoir formed by the dam last described, is the new reservoir dam of the City of Chicopee Water Works. This dam, which was completed in 1927, forms a reservoir of about thirty acres in area and of one hundred and thirty-five millions of

gallons in capacity. The drainage area contributory is four square miles.

The dam is an earthen embankment containing a heavily reinforced concrete core wall of the flexible type. This wall, one foot in thickness, extends through the entire length of the dam from about three feet below the natural ground surface to about two feet above the top of the earthen embankment. A steel sheet piling cut-off wall is rigidly connected to the base of the core wall and extends from thirty to thirty-five feet into the natural ground under the dam.

The length of the structure along its top is five hundred and fifty feet, its maximum height forty-six feet and its width on top twenty-two feet. The upstream face is divided into two parts by a berm five feet wide. The portion below the berm has a slope of three and one-half to one and is surfaced with broken stone and coarse gravel, while that above the berm has a slope of three to one and is protected from wave action by a facing composed of reinforced slabs six inches in thickness and ten feet square.

The downstream side has a grassed slope of two and one-half to one and also contains a berm five feet in width.

Two cast iron pipe lines, one a thirty inch blow-off, and the other a twenty-four inch supply pipe, are laid through the natural ground and part of the embankment to the upstream toe of the dam. These pipes are laid side by side and are provided with concrete collars.

The spillway and spillway channel are located at the west end of the dam and built of concrete. The crest of the spillway is forty-five feet in length and eight feet below the top of the core wall. The spillway channel is about two hundred and thirty feet in length and is provided with baffle piers at its downstream end, where it wastes into the lower reservoir of the Water Supply.

CITY OF CHICOPEE WATER WORKS DAM NO. 3.

Morton Brook is the only sizable tributary of Cooley Brook, which it joins about one-half a mile from the mouth of the latter.

On Morton Brook, about a thousand feet upstream from its junction with Cooley Brook, and at a point where the drainage area contributory is only about one-third of a square mile, is located another dam belonging to the City of Chicopee Water Works.

This is an earthen structure faced on the upstream side with heavy cut stone masonry. Its length is thirty-seven feet and height seven and one-half feet. The spillway, built of heavy cut stone, is six feet in length and located within ten feet of the west end of the dam. The pond formed is very small being only about one-tenth of an acre in area.

HAMPDEN BREWERY COMPANY DAM.

Willimansett Brook rises in the Chicopee Plains about a mile southeast of Fairview and flows southwest three miles to the Connecticut River into which it empties a short distance upstream from the Willimansett Bridge. Its total drainage area is four and one-half square miles.

The first dam on this brook is in Willimansett and belongs to the Hampden Brewery Co., Willimansett, Mass. It is located at a point a few hundred feet from the mouth of the brook, and its drainage area contributory is practically the total drainage area of the brook, namely, four and a half square miles.

It is an earthen embankment eighty-two feet in length, eighteen feet in height, and twenty feet in width on its top, which carries a driveway. The

spillway is in the center of the structure and is fifteen feet in length, with its crest six feet below the top of the dam. The structure forms a pond covering about three acres.

MOUNTAIN VIEW LAKE CO. INC. DAM (FORMERLY HOLYOKE ICE CO. DAM).

This structure is located about one mile upstream from the Hampden Brewery Co. dam, last described, at a point where the drainage area contributory is about three and one-half square miles, and belongs to the Mountain View Lake Co. Inc., Holyoke, Mass.

The structure is an earthen embankment one hundred and ninety feet or thereabouts in length, twenty-seven feet in height and thirty feet in width on top. The slopes of the embankment are three to one on the upstream side and two to one on the downstream side. In the natural ground near the southwest end of the dam, is a concrete spillway from which extends an overflow channel one hundred feet in length. There is also a four foot diameter steel drain pipe encased in concrete laid through the dam.

A. A. LANGWALD DAM.

Upstream about three-quarters of a mile from the Mountain View Lake Co. Inc. dam last described, at a point where the drainage area contributory is two and three-quarters square miles, is a swimming pool dam belonging to A. A. Langwald, Holyoke, Mass. It is an earthen embankment one hundred and ten feet in length, fourteen feet in height and eight feet in width on top. Its spillway or overflow is five feet below the top of the dam. The slopes on both up and downstream sides are very flat being about one on four and one-half.

The dam was built in 1929 and abandoned in 1936 when it was breached and a free water-way made through it for the brook.

A previous earthen dam 34 feet in height built on the same site failed in 1922.

NATURAL PONDS

There are no natural ponds in Chicopee.

CHICOPEE RIVER DAMS

There are eleven dams on the Chicopee River, of which six are in Chicopee, one in Springfield, one in Ludlow, two in Wilbraham and one in Palmer.

The Chicopee River is formed by the union of the Swift, Ware and Quaboag Rivers at the village of Three Rivers in the town of Palmer, from which point it flows westerly, southerly and westerly again to the Connecticut River, into which it empties at Chicopee. In its course, it forms the boundary line between Ludlow and Wilbraham, Ludlow and Springfield, and about one and one-half miles of the boundary line between Chicopee and Springfield.

The Chicopee River, from its mouth to Three Rivers, is fifteen miles in length and has a total drainage area of seven hundred and twenty-one square miles. It is the largest tributary of the Connecticut River, and is also the largest river, the drainage area or water shed of which, lies entirely within the State of Massachusetts.

DANA S. COURTNEY COMPANY DAM.

About one-half mile upstream from the mouth of the river at a point in Chicopee, where the drainage area of the river is seven hundred and eighteen square miles, is a dam belonging to the Dana S. Courtney Company of Chicopee, Mass., manufacturers of bobbins and spools.

It is a log crib structure five hundred and fifty feet in length and six feet in height, built on a ledge foundation and extending in a zig-zag line across the river.

AMES SWORD COMPANY DAM.

Upstream about one thousand feet from the Dana S. Courtney dam last described, at a point where the drainage area contributory is about seven hundred and eighteen square miles, is located a dam belonging to the Ames Sword Company, Chicopee, Mass.

This is a stone spillway structure two hundred and eighty-two feet in length between abutments and eleven feet in height, built upon a ledge foundation. The bulkhead, from which the penstocks are laid, is located at the south end of the structure.

DWIGHT MANUFACTURING COMPANY DAM.

About eight hundred feet upstream from the Ames Sword Company dam, at a point where the drainage area contributory is somewhat less than seven hundred and eighteen square miles, is located a dam, now or formerly, belonging to the Dwight Manufacturing Company of Chicopee, Mass.

This is a stone masonry spillway gravity structure, three hundred and fifty feet in length, fifteen feet in height and forms a pond of thirty-eight acres. It is laid on a ledge foundation, with its ends abutting against ledge. At the south end is the bulkhead, in which are installed the headgates for feeding the canal laid to the Dwight Manufacturing Company plant some hundreds of feet below. This canal also supplies water to other plants located along its bank. The dam is of heavy section and seems to be a solid piece of masonry.

CHICOPEE MANUFACTURING COMPANY DAM NO. 1.

The next dam upstream belongs to the Chicopee Mfg. Co., Chicopee Falls. It is located just below the highway bridge that crosses the river at Chicopee Falls, and has a drainage area contributory of seven hundred and fourteen square miles.

This is a stone masonry faced spillway structure backed upstream with planking and earth, three hundred and sixty-seven feet in length, and from six to ten feet in height. Its crest is built of wood laid on top of the masonry. The pondage behind the dam is not large.

CHICOPEE MANUFACTURING COMPANY DAM NO. 2.

About five hundred feet upstream from dam No. 1, last described, at a point where the drainage area contributory is practically the same as dam No. 1, is located the Chicopee Manufacturing Company dam No. 2.

This dam, which replaced an old log dam in 1894, is a spillway structure laid on a ledge foundation. It is three hundred and ten feet in length between abutments, and eight and one-half feet in height. The greater part, starting from the north abutment, is built of stone masonry, while the remaining part next to the south abutment, is built of concrete.

BIRCHAM BEND POWER COMPANY DAM.

About two miles upstream from the Chicopee Manufacturing Company dam No. 2, at Bircham Bend, so-called, where the drainage area contributory is seven hundred and four square miles, is located a dam belonging to the Bircham Bend Power Company of 73 State Street, Springfield, Mass.

This is a stone masonry spillway structure, to which was added in 1900, a concrete apron faced with vitrified brick. The length of the structure is two hundred and twenty-one feet and its height approximately seventeen feet. It forms a pond ninety-one acres in area, and has attached thereto, a hydro-electric plant.

INDIAN ORCHARD COMPANY DAM.

This structure is located in Indian Orchard, at a point where the drainage area contributory is six hundred and eighty-seven square miles, and belongs to the Indian Orchard Company of Indian Orchard, Mass. It is a stone masonry spillway structure built on a ledge foundation, four hundred feet in length and twenty-nine feet in height.

The structure forms a pond eighty-five acres in area, and has attached thereto a hydro-electric plant.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 1.

Upstream about a mile from the Indian Orchard Company dam, at a point where the drainage area contributory is six hundred and eighty-six square miles, is located a dam belonging to the Ludlow Manufacturing Associates.

This is a masonry concrete spillway structure of the Ogee type built in 1918. It is about two hundred feet in length between abutments and about twenty feet in height above the stream bed. The dam forms a pond of about seventy-two acres in area, and has attached thereto a hydro-electric plant.

COLLINS MANUFACTURING COMPANY DAM.

At North Wilbraham, where the drainage area of the river is six hundred and eighty-one square miles, is the Collins Mfg. Co. dam.

This is a masonry faced spillway structure backed with earth, about two hundred and fifty feet in length and twenty feet in height. Along the entire length of the downstream face is a horizontal wood apron, built in the form of a step, thirty-six feet in width and five feet in height. The pond formed covers about eighty acres.

LUDLOW MANUFACTURING ASSOCIATES DAM NO. 2.

At Red Bridge about two and one-quarter miles upstream from the Collins Mfg. Co. dam last described, at a point where the drainage area of the river is six hundred and sixty-four square miles, is another dam belonging to the Ludlow Mfg. Associates.

The dam was built in 1901. It has a maximum height of fifty-eight feet to the top of the earth embankment and a total length of about six hundred and twenty-five feet. About one half the length of the structure is an earthen embankment having a concrete core wall. This embankment is paved with granite blocks on the upstream slope and sodded on the downstream slope, with the latter bermed. The other half is the spillway section built of concrete masonry, Ogee in type. It is three hundred and six feet in length, with its crest ten feet below the top of the embankment.

The pond formed extends within a half mile of the center of the village of Three Rivers. It covers an area of one hundred and sixty-seven acres and has a total storage capacity of about 1200 millions of gallons. On the Wilbraham side of the river there is a hydro-electric plant attached to the dam.

OTIS COMPANY DAM.

The last dam on the Chicopee River is at Three Rivers where the drainage area contributory is six hundred and forty-seven square miles. It is a concrete masonry structure of the Ogee type, two hundred and eleven feet in length and about thirty feet in height. The pond formed by the structure covers sixty acres, and to it is attached a hydro-electric plant which furnishes energy to the company's textile mills in Three Rivers.

E A S T L O N G M E A D O W

SMITH DAM.

The only dam in East Longmeadow is on Pecowsic Brook. This brook rises on the northern slope of McCarthy Hill in East Longmeadow, flows westerly, following a circuitous route through the towns of East Longmeadow, Springfield and Longmeadow; then through Forest Park in Springfield to the Connecticut River, into which it empties about a mile downstream from the mouth of Mill River. Pecowsic Brook is about six miles in length and has a total drainage area of six and three-quarters square miles.

About three-quarters of a mile northwest of East Longmeadow Center, near where the railroad crosses the highway, at a point in the brook where the drainage area contributory is one and three-quarters square miles, is located the Smith ice-pond dam.

This dam at present forms no pond as it has an opening through it for the free discharge of the brook. Years ago a grist mill and a sawmill were located here, known as the Taylor Mills.

NATURAL PONDS

There are no natural ponds in East Longmeadow.

GRANVILLE

There are twenty-two dams and two natural ponds in Granville. One of these ponds, known as Black Pond, is the headwaters of Borden Brook, which is one of the sources of the City of Springfield Water Supply, and the other, known as Parsons Pond, is the headwaters of Pond Brook.

Of the dams, three are on Tillotson Brook, three on Hollister Brook, one on Dickinson Brook, one on a tributary of Dickinson Brook, four on Seymour Brook, two on Trumble Brook, three on Valley Brook, three on Hubbard River, one on Pond Brook and one on Borden Brook.

There were formerly two more dams in Granville, namely, the Curtis Phelon and the Stowe's Pond dams.

The former was located on a small tributary of Borden Brook. It was an old sawmill dam about 10 feet in height and 80 feet in length. The latter was located on a small tributary of the Westfield Little River and was also a sawmill dam which formed what was known as Stowe's Pond. Both dams being located within the limits of the Cobble Mountain Reservoir are now submerged.

CITY OF WESTFIELD WATER WORKS DAM NO. 1. (INTAKE DAM).

Tillotson Brook rises on the northern slope of Bad Luck Mountain, flows east and southeast to Dickinson Brook, both brooks forming Munn Brook. It is about two and one-half miles in length and has a total drainage area of a little over six square miles.

Upstream about one thousand feet or thereabouts from its confluence with Dickinson Brook and about one and one-half miles northeast of Granville Corners, at a point where the drainage area contributory is six square miles, is a dam belonging to the City of Westfield Water Works, known as the Granville Intake dam. This dam forms a reservoir which covers about one and three-quarters acres, and has a capacity of three million gallons.

It is a masonry spillway structure backed with earth, one hundred and forty-seven feet in length and fifteen feet in height. The structure was built in 1900.

CITY OF WESTFIELD WATER WORKS DAM NO. 2. (STORAGE RESERVOIR DAM).

About two thousand feet upstream from the Westfield Water Works intake dam last described, at a point where the drainage area contributory is about five and three-quarters square miles, is located the large storage reservoir dam belonging to the City of Westfield Water Works.

It is an earthen embankment containing a concrete cut-off wall, eight hundred and forty feet in length, ninety feet in height above the natural streambed and twenty-four feet in width on top. The upstream side below the water line has a slope of one on three, and the downstream side has an average slope of one on two and a quarter. The upstream slope is heavily rip-rapped with stone and the downstream slope has a stone toe.

At the westerly end of the structure is the spillway from which a channel, excavated in the natural ground, extends and connects with the brook, at a point a considerable distance downstream from the dam. The spillway is sixty feet in length and its crest is ten feet below the top of the dam. It is built of concrete and the spillway channel is lined with the same material.

There are two pipes laid through the dam, one a forty-two inch reinforced concrete drain pipe, and the other a twenty-four inch cast iron outlet pipe encased in concrete. The area of the reservoir formed by the dam is about seventy-five acres and its capacity six hundred and thirty millions of gallons.

The dam was completed in 1929 and, until the Cobble Mt. dam was completed in the early part of 1932, it had the distinction of being the highest dam in the county and the second highest earthen dam in the State.

HIGGINS DAM.

On Tillotson Brook about one-half a mile upstream from the City of Westfield Water Works storage reservoir dam last described, where the drainage area is two and one-half square miles, there was years ago a dam which furnished power for a sawmill owned by W. H. Higgins. Hardly a trace of this establishment now remains and no obstruction is offered to the natural flow of the brook.

CITY OF WESTFIELD WATER WORKS DAM NO. 3. (FORMERLY STRONG DAM).

Hollister Brook is a tributary of Tillotson Brook. It rises on the southeast slope of Sweetman Mountain and flows easterly and southerly a distance of about two miles, emptying into the large storage reservoir of the City of Westfield Water Works. The total drainage area of the brook is two and one-quarter square miles.

On Hollister Brook, at a point about one-half mile upstream from the Westfield Storage Reservoir, where the drainage area contributory is one and a half square miles, is located a dam owned by the City of Westfield Water Works.

This dam, which was formerly the long abandoned Strong sawmill dam, was rebuilt and restored in 1934-35 by the City of Westfield for the purpose of providing water for use in case of forest fires on the heavily wooded water shed. It is a dry stone masonry spillway structure backed with earth, one hundred and twenty-four feet in length, thirteen feet in height and twenty feet in width on top.

The pond formed has a capacity of about six hundred thousand gallons.

CITY OF WESTFIELD WATER WORKS DAM NO. 4. (FORMERLY WELLS MILLS DAM).

About two thousand feet upstream from the last described dam, and at a point about one thousand feet easterly of the West Granville and Wildcat Roads junction, where the drainage area contributory is about one and one-quarter square miles, is located a fourth dam owned by the City of Westfield Water Works. This dam, like dam No. 3 above described, was an old abandoned mill structure which was rebuilt in 1934-35 to provide pondage for fire protection on the watershed.

The structure is a dry rubble masonry wall, backed on the upstream side with a heavy earth embankment. It is seventy-five feet in length, seventeen feet in height, and eighteen feet in width on top. The spillway is six feet in width and twelve feet in height above the streambed. It is built of concrete in the form of a culvert passing through the dam. There is also a surface overflow swale eight feet in width and one foot in depth extending across the top of the dam.

The pond formed holds about one-third of a million of gallons of water.

CITY OF WESTFIELD WATER WORKS DAM NO. 5. (FORMERLY ARNOLD DAM).

Upstream about one and a quarter miles from the last described dam, and at the headwaters of the brook, where the drainage area contributory is about one-quarter of a square mile, is located a fifth dam owned by the City of Westfield Water Works. There was formerly a small fishing pond at this site, and in 1935 the dam was overhauled and re-built by the City of Westfield to provide pondage for fire protection on the watershed.

The dam is an earthen structure, faced with cobblestones, one hundred and twenty feet in length and six feet in height. In plan the dam is not straight, but shaped like the letter L, with a spillway culvert six feet in length, located near the angle. The pond formed is a shallow one, less than one-quarter of an acre in area.

DICKINSON DAM.

Dickinson Brook rises on the southeast slope of Bad Luck Mountain about one-half mile northwest of Granville Corners, flows southwesterly and northerly to Tillotson Brook, which it joins to form Munn Brook. It is about two and one-half miles in length and has a total drainage area of seven and one-half square miles.

Upstream, about one mile from the mouth of the brook, and near the highway at Granville Corners, at a point where the drainage area contributory is six square miles, is a dam owned by Howard Dickinson, Granville, Mass.

This is a low dam of logs and concrete built across the brook to divert the water to the forebay of the sawmill and cidermill attached. It is about one hundred feet in length and only two and one-half or three feet in height. The pondage formed is very small and should the structure fail no material damage would result from the released water.

R. B. COOLEY ESTATE DAM (TROUT POND DAM).

This dam is on a tributary which joins Dickinson Brook from the south, about one-half mile downstream from Granville Corners. It belongs to the R. B. Cooley Estate, Granville, Mass., and is located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is about one square mile.

The dam is an earthen embankment one hundred and fifty feet in length, eight feet in height and carries a private roadway on its top, which is eight or nine feet in width. In the center of the dam there is a spillway or overflow seven feet in length over which the water falls into a culvert laid through the dam.

The pond formed is a large body of water known as Trout Pond, covering probably one hundred acres. The dam was built about forty years ago, and the pond is an artificial one, as there was no trace of a pond at this place previous to the construction of the dam.

NOBLE & COOLEY DRUM SHOP DAMS.

Seymour Brook rises on the southeast slope of Winchell Mountain, flows southeasterly and northeasterly to Dickinson Brook into which it empties at Granville Corners. It is two and one-quarter miles in length and has a total drainage area of three and one-half square miles.

There are three small dams on Seymour Brook in close proximity to each other, belonging to the Noble & Cooley Drum Shop, Granville, Mass. They are located at Granville Corners about fifteen hundred feet upstream from the mouth of the brook, at a point where the drainage area contributory is three and one-quarter square miles.

The first of these dams is a short distance downstream from the drum shop, and is an earthen embankment which carries the highway. It is one hundred and twenty feet in length and seven and one-half feet in height. Its spillway is built of concrete, twelve feet in length, and discharges into a concrete culvert laid under the highway. The pond formed is small and is fed from the main stream by a pipe laid under the factory buildings.

The second dam is located above the drum shops. It is an earthen embankment two hundred and forty-five feet in length and seven feet in height. It has two spillways, one on the north end eight feet in length, and one on the south end six feet in length. The pond formed by this dam is used as a swimming pool and is fed by water diverted through a twelve inch galvanized pipe from the main stream.

The third or diversion dam is only a small structure, one and one-half feet or thereabouts in height, built across the main stream and forms no material pondage. It is located a few hundred feet upstream, across the highway from the second dam, and turns the water through the twelve inch galvanized pipe into the swimming pool above referred to.

ROBERTS DAM.

About one and one-half miles upstream from the Noble & Cooley Drum Shop dams, at a point where the drainage area contributory is about one-half a square mile, is located a sawmill dam belonging to Ralph Roberts, Granville, Mass.

The dam is built of earth and stone. Its length is one hundred and twenty-five feet and its height only four feet. It turned water into a canal that connected with the mill below, which went out of existence years ago.

The dam still remains but it forms little or no pondage.

HODGE DAM.

Trumble Brook rises on the west slope of Bad Luck Mountain about three-quarters of a mile north of East Granville, flows southerly and easterly to Seymour Brook, into which it empties about one-half mile upstream from the junction of Seymour and Dickinson Brooks. Trumble Brook is one and three-quarters miles in length and has a total drainage area of less than two square miles.

About a mile upstream from its mouth, where the drainage area contributory is one and one-quarter square miles, is located an old sawmill dam belonging now or formerly, to Julia Hodge, Granville, Mass. This is an earthen structure one hundred and twenty-five feet in length and of considerable height, faced with heavy dry stonework on its downstream side. The center of the dam has gone out, making a free waterway for the brook so that no pondage is formed.

DEGANO DAM.

About one-half mile upstream from the Julia Hodge dam, last described, at a point where the drainage area is about one-third of a square mile, is located an ice pond dam belonging to John Degano, East Granville, Mass.

The dam is an earthen embankment one hundred feet in length and seven feet in height, faced upstream with concrete. It is a substantial structure as it carries the highway on its top, or in other words, the highway is the dam through which a culvert three feet wide and five and a half feet deep is laid from the stop plank spillway to discharge the waste of the pond. The pond is somewhat over an acre in area.

HARTFORD METROPOLITAN DISTRICT DAM NO. 1. (FORMERLY HOLCOMB DAM).

Valley Brook rises in the northerly part of the town of Granville, one and one-half miles west of Sweetman Mountain, and three miles northwest of East Granville. It flows south through the town of Granville, across the Massachusetts-Connecticut boundary line and thence to the east branch of the Farmington River. It is six miles in length and has a total drainage area of eight and one-half square miles.

About one and one-half miles from its mouth, or one-half mile upstream from Massachusetts-Connecticut boundary line, at a point in the brook where the drainage area contributory is six square miles, is located an old sawmill dam formerly belonging to A. R. Holcomb, Granby, Connecticut, but which it appears has been purchased by the Hartford Metropolitan Water District. The structure has been a derelict and has formed no pondage for years.

HARTFORD METROPOLITAN DISTRICT DAM NO. 2. (FORMERLY HOLCOMB DAM).

Upstream about fifteen hundred feet from the dam last described, is located another sawmill dam which formerly belonged to A. R. Holcomb, Granby, Connecticut, but it appears that it has likewise been purchased by the Hartford Metropolitan Water District. This dam has also been a derelict and formed no pondage for some years.

STUART DAM.

About two and one-quarter miles upstream from the dam last described, in Twining Hollow, so-called, at a point where the drainage area contributory is two and one-half square miles, is located an old sawmill dam now or formerly belonging to George Stuart, Granville, Mass. The greater part of this structure has gone out, and, therefore, no pondage is formed.

THOMPSON DAM.

Hubbard River rises on the south slope of Barnes Mt. in Tolland, flows southeasterly through Granville to Pond Brook, both forming the east branch of the Farmington River. Hubbard River is six miles in length and has a total drainage area of fourteen and three-quarters square miles.

At a point a short distance below its junction with Pond Brook, where the drainage area contributory is twenty square miles, was a sawmill dam belonging to F. Thompson, Granville, Mass. The sawmill went out of existence long ago, and only a vestige of the dam remains.

GREEN DAM.

Two thousand feet farther upstream, at a point where the drainage area contributory is about fourteen and one-half square miles, was another old sawmill dam which was owned in the seventies by one H. Green. This structure has been a derelict for years and now not much more than a trace of it is left.

JOHNSON DAM.

Still farther upstream, a distance of one and one-half miles from the dam last described, at a point where the drainage area is twelve square miles, was a turning and sawing factory dam owned and operated by J. M. Johnson some fifty years ago. The factory then was a busy establishment, though it or the dam does not exist at the present time, traces only of both being left. The mill privilege and land adjoining are now within the boundaries of the Granville State Forest.

FRISBEE DAM.

Pond Brook rises in Parsons Pond, which is situated about two miles north of West Granville, flows southwesterly and southerly to Hubbard River with which it joins to form, as has been stated above, the east branch of the Farmington River. Pond Brook is four and one-half miles in length and has a total drainage area of five and one-quarter square miles.

In West Granville, at a point on the brook where the drainage area contributory is one and one-half square miles, is located a dam belonging now or formerly to Nelson Frisbee, West Granville, Mass.

It is a dry stone masonry structure backed with earth, eighty-five feet in length and eight feet in height. It forms no pond, as part of the structure is gone out. To this dam there was formerly attached a tannery which was operated by Elisha Marks. The tannery went out of existence years ago.

CITY OF SPRINGFIELD WATER WORKS DAM (FORMERLY HOWARD DAM).

On Borden Brook (described under Blandford) a short distance above the southwest corner of the Borden Reservoir, at a point where the drainage area contributory is about four square miles, is part of an old sawmill dam, which was purchased by the City of Springfield Water Works for the protection of its water shed. It is believed that some fifty years ago this dam and the mill attached, belonged to one Howard. The dam and mill have been abandoned for years and at present hardly a trace of either structure remains.

NATURAL PONDS

There are two natural ponds in Granville. One is Parsons Pond, which is the headwaters of Pond Brook and located about two miles north of West Granville. This pond has a surface area of about twenty-five acres and a drainage area of one-third of a square mile.

The other is black Pond, which is the headwaters of Borden Brook and located about two and one-half miles northwest of West Granville. Black Pond has a surface area of fourteen acres and a drainage area of one-quarter of a square mile. No dam has been constructed across the outlets of either of these ponds.

The area given for the above two natural ponds are taken from "Report of the Commission on Waterways and Public Lands on Water Resources of Massachusetts, 1918."

H A M P D E N

There are fifteen dams in Hampden, six of which are located on Scantic Brook, seven on tributaries of Scantic Brook and two on a tributary of the South Branch of Mill River. There are no natural ponds in Hampden.

CARMODY DAM.

Scantic Brook rises in the northern part of the town of Stafford, Connecticut, flows northwesterly to Hampden Center, Massachusetts, thence westerly and southerly to North Somers, Connecticut, where it joins Watchaug Brook, both brooks forming the Scantic River, which is a tributary of the Connecticut River. The total drainage area of Scantic Brook is thirty-one and one-half square miles, and its length is eleven miles, of which eight are in the town of Hampden.

The first dam on Scantic Brook in Massachusetts is that one in the town of Hampden belonging, now or formerly, to Mrs. Anna Carmody, East Longmeadow, Mass. It is located about a mile upstream from the state line at a point where the drainage area contributory is twenty-four and one-half square miles.

This dam is not built across the main stream but across a diversion canal, leading from the brook to the saw and grist mill attached, and forms a pond or forebay about one-half an acre in area.

The dam is an earthen embankment one hundred and five feet in length, twenty-two feet in height and is faced on the downstream side with a masonry wall. A four foot diameter steel penstock laid through the dam connects the pond with the wheels in the mill. The overflow is twelve feet in length and located over one hundred feet away from the dam. A channel excavated in the natural earth connects this overflow with the main brook downstream.

The dam was first used to furnish power to a saw and grist mill owned by Kibbie and Tuttle who, evidently, built the works over sixty-five years ago. The grist mill, part of the establishment, went out of existence some years ago, and now, after operating only intermittently for some years, it seems that the sawmill is also shut down for good and the industry abandoned.

KENWORTHY DAM.

About a mile upstream from the Carmody dam, last described, and one-third of a mile east of Scantic, at a point where the drainage area contributory is about twenty-three and one-half square miles, is part of a dam belonging now or formerly to John Kenworthy, Hampden, Mass. This dam forms no pondage and offers no obstruction to the natural flow of the stream.

To the dam was attached a woolen mill known as the Scantic Woolen Factory which went out of existence about thirty years ago.

KIMBALL DAM.

This structure is about one-third of a mile upstream from the dam last described, and located practically within Hampden Center, at a point on the stream, where the drainage area contributory is about twenty-three and one-quarter square miles. It belongs, or formerly belonged, to H. Earl Kimball, 142 Angel Street, Providence, Rhode Island. The dam was built for the purpose of developing power for a woolen mill which was in operation until about 1905, when the mill was burned down and not rebuilt. At one time the plant was known as the Ravine Manufacturing Company.

The dam is curved upstream in plan, and is a spillway masonry structure backed with gravel. Its length is one hundred and eighty feet and its height eighteen feet. A canal was laid from its west end to the woolen mill below.

The dam backs up water for a considerable distance, but the pond is narrow and does not cover more than a few acres.

McCray Dam.

Upstream about one-half a mile from the Kimball dam, last described, and in Hampden Center, where the drainage area of the brook is about twenty-three square miles, is a dam belonging now or formerly to Lincoln McCray, Hampden, Mass.

To this dam was attached a woolen mill, which was destroyed by fire about forty years ago and was not rebuilt. The plant was then known as the Lacowsic Woolen Company Mill. The dam was a wooden spillway structure eight feet in height and one hundred and twenty-five feet in length between masonry abutments. It is breached in the center and has a free waterway through it so that no pondage is formed..

Stalker Dam (Formerly McCray Dam No. 2).

About one-half mile upstream from the McCray dam, last described, at a point where the drainage area contributory is twenty and three-quarters square miles, is a dam belonging to Mrs. E. E. Stalker, Hampden, Mass. It is a stone spillway structure backed with gravel. The length of the dam between abutments, which is also the spillway section, is seventy-six feet and its height is eight feet.

The pond formed by the dam is small and practically filled with silt, so that in case of failure of the structure no material damage would be done by released water.

Rockwell Dam.

About two miles upstream, at a point where the drainage area is seven and one-half square miles, is a dam belonging to Mrs. S. K. Rockwell, Hampden, Mass., or Belrose Lane, Radnor, Pa.

It is a masonry spillway structure, with the downstream face dry masonry and the upstream face plastered and reinforced with concrete. The structure is sixteen feet in height and one hundred and thirty-four feet in length, of which one hundred and fourteen feet is the spillway section. The dam is rather light in section with its top only two and one-half feet wide. The bulkhead at the west end is twenty feet in length and contains a gate for drawing down and emptying the pond.

This dam was an old structure overhauled and increased in height. The pond formed by the dam covers about two acres and is used as a pleasure pond. Formerly there was a gristmill and a sawmill attached to the dam known as Burts Mills.

DRISCOLL DAM.

Two of the seven dams that are on tributaries of Scantic Brook are on a tributary that rises in the southwest part of Hampden and, flows west and south to Scantic Brook, into which it empties at a point in Connecticut just below the Massachusetts-Connecticut state line. This tributary is about one and one-half miles in length and has a total drainage area of about one square mile.

On ascending this brook from the Massachusetts-Connecticut state line, the first dam to be met is located on the edge of the highway leading from Scantic to North Somers, at a point about a mile south of Scantic, where the drainage area contributory is a little less than one-half a square mile. It belongs to the estate of Mrs. Margaret Driscoll, Ludlow, Mass. R.F.D. No. 2.

This dam, which lies close to the easterly side of the highway, is an earthen embankment ninety feet in length, six and one-half feet in height, and eight feet in width on top. The structure has an ample spillway and forms an ice pond of about one acre.

WINTHROP KIBBE DAM.

This dam is located about one thousand feet upstream from the Driscoll dam last described, at a point where the drainage area is only about one-quarter of a square mile and belongs to Winthrop Kibbe, Somers, Connecticut. It is an earthen embankment one hundred and sixty-eight feet in length, six feet in height, and six and one-half feet in width on top. The dam forms an ice and fishing pond about four acres in area.

SMITH DAM.

Two more of the seven dams that are on tributaries of Scantic Brook are on a tributary, which rises on the west slope of Pine Mountain, and flows directly north to Scantic Brook, into which it empties at Hampden Center. This tributary is about one and one-half miles in length and has a total drainage area of about one square mile.

The first dam on this tributary above its mouth belongs to R. S. Smith, Hampden, Mass. The structure abutts the west side of the South Road, so-called, at a point about a mile south of Hampden Center, where the drainage area contributory is about one-half a square mile. The dam is a reinforced concrete wall six or eight inches in thickness backed with earth. It is fifty-five feet in length and six feet in height. The structure is a derelict and backs up no water.

N. S. KIBBE DAM.

About one third of a mile upstream from the Smith dam last described, and on the west side of the South Road, so-called, at a point where the drainage area contributory is about one-quarter of a square mile, was a small ice pond dam now or formerly belonging to N. S. Kibbe, Hampden, Mass.

This structure is now a derelict with a free waterway through it and therefore no further description of it is necessary.

GOODWILL DAM.

The fifth of the seven dams on tributaries of Scantic Brook is on East Brook, which rises in the southeast corner of Wilbraham and flows southerly through Hampden to Scantic Brook, into which it empties about one-third of a mile east of Hampden Center.

East Brook is about three and one-half miles long and has a total drainage area of three square miles. About three-quarters of a mile from the mouth of the brook, at a point where the drainage area contributory is two and three-quarters square miles, is a dam belonging now, it is believed, to Harry Goodwill, and formerly to the heirs of Simon S. Hunt.

The dam is an earthen embankment faced up and down stream with dry stone masonry, one hundred and seventy feet in length, eleven feet in height and twenty feet in width on top. The spillway is adequate and located outside the west end of the dam. The pond formed covers about two and one-half acres and, years ago, furnished power to a sawmill operated by Hunt and Beebe. The mill was shut down about forty years ago and the pond at present is used for fishing purposes.

GAYLORD DAM.

The sixth of the dams on tributaries of Scantic Brook is on a tributary of Big Brook, which in turn is a tributary of Scantic Brook. This tributary of Big Brook rises on the north slope of Mount Vision, and flows southeasterly to Big Brook, into which it empties about one and one-half miles above the confluence of Big and Scantic Brooks. It is only about one-half a mile long and has a total drainage area of about one-quarter of a square mile. The dam is located near the headwaters, at a point where the drainage area is not over one-tenth of a square mile, and belongs to Emerson Gaylord, Chicopee, Mass.

It is an earthen structure with a concrete facing, one hundred and ten feet in length and nine feet in height. An adequate concrete spillway is built in the center of the dam. The pond formed covers about one-quarter of an acre and is used as a pleasure and ice pond.

FULLER DAM.

The last of the seven dams on tributaries of Scantic Brook is on West Brook. This brook rises on the west slope of Mount Vision and flows southerly to Scantic Brook, into which it empties at Hampden Center. It is about one and three-quarters miles in length and has a total drainage area of a little less than one square mile. The dam is located about a mile upstream from its mouth, or a mile north of Hampden Center, at a point where the drainage area contributory is a little less than one-half of a square mile, and belongs to F. W. Fuller, Springfield, Mass.

It is an earthen embankment one hundred and ten feet in length and eight feet in height, faced upstream with a concrete wall about one foot in thickness. The pond formed which is not over one-quarter of an acre, is used as a pleasure pond.

KELLOG FARMS INC. DAMS.

These two dams are on a tributary of the South Branch of Mill River. This tributary rises on the west slope of the Wilbraham Mountain, about a mile north of Hampden Center, and flows westerly and northerly to the South Branch of Mill River, into which it empties at a point in Wilbraham, about a mile upstream from where the South Branch intersects the East Longmeadow-Wilbraham boundary line.

Its length is two miles and its total drainage area is one and one-quarter square miles. The two dams belong to the Kellog Farms Inc., Springfield, Mass. They are located in close proximity to each other about one and one-half miles north of Scantic, and about fifteen hundred feet east of the highway leading from Scantic to Wilbraham. The drainage area contributory to these dams is less than one-quarter of a square mile.

The lower of the two is a concrete structure one hundred and forty feet in length and eighteen feet in height. It forms a small reservoir not over one-eighth of an acre in area, which is used as a water supply for the farm. The other dam, which is three hundred feet upstream, is a masonry structure sixty-four feet in length and about nine feet in height. The reservoir or pond formed by this dam is very small.

NATURAL PONDS

There are no natural ponds in Hampden.

H O L L A N D

There are nine dams and two natural ponds in the town of Holland. Of the dams two are on Holland Brook, a tributary of Quinebaug River, three on a tributary of Holland Brook, three on Stevens Brook, and one on a tributary of Stevens Brook.

ALEXANDER DAM.

Holland Brook rises in the town of Union, Connecticut, flows northwest into Holland and then north through Holland into Brimfield, where it joins Mill Brook to form the Quinebaug River. Holland Brook is about eight miles in length and has a total drainage area of about twenty-six square miles.

Upstream about one and one-half miles from its mouth, or one-half mile above Holland Pond, so-called, at a point where the drainage area contributory is twenty-three and one-half square miles, was located a dam on property now or formerly belonging to E. Warren Alexander, Worcester, Mass.

To this structure, which was an earthen embankment faced with dry stone masonry, were attached a sawmill and a gristmill. Both mills have been abandoned for forty years and only traces of their foundations remain. Likewise only traces of the dam remain, and therefore, the structure can be dismissed without any further description.

HAMILTON WOOLEN COMPANY DAM.

About one-half a mile upstream from the E. Warren Alexander dam and one-half mile northeast of Holland Center, at a point about seventy feet south of the highway, where the drainage area contributory is twenty-one and three-quarters square miles, is located a dam belonging to the Hamilton Woolen Company, Southbridge, Mass.

It is a dry stone masonry structure of heavy section backed with earth, one hundred and seventy-six feet in length and sixteen feet in height, laid on a ledge foundation. The spillway is fifty-three feet in length with its crest three feet below the top of the dam.

The dam forms a storage reservoir for the Hamilton Woolen Mills, located on the Quinebaug River in Southbridge, and has a sluice-way through its center in which are installed gates for regulating the height of the reservoir.

The dam, as far as could be learned, was built in the sixties. It is still in good condition and always kept in repair. This is as it should be, considering the large body of water behind it, known as the Hamilton reservoir, which covers about four hundred and forty-five acres.

WELLS DAM.

On a tributary of Holland Brook into which it empties from the west, at the south end of the Hamilton reservoir, is a dam belonging to Cora Wells, Holland, Mass. This structure is located about fifteen hundred feet from the mouth of the tributary, at a point where the drainage area contributory is five and three-quarters square miles.

It is a gravity dry stone masonry structure to which a sawmill was attached. Only traces, however, of the foundation of the mill remain. The dam is a derelict and has an opening through it for the free flow of the brook.

RORABAUGH DAM NO. 1.

This dam is located on a tributary of the Hamilton Reservoir, at a point about one mile west of the south end of that reservoir, and one-quarter mile north of the Massachusetts-Connecticut State line. It is owned by James E. Rorabaugh, 674 Buchannon Place, West New York, New Jersey, and has a drainage area contributory of less than one-half square mile.

The dam was built within the past few years to form a fishing and pleasure pond of about a quarter of an acre in area.

It is an earthen dam about ten feet in height, 200 feet in length and about ten feet in width or thickness. The upstream side is faced with a heavy stone masonry wall laid in cement mortar, and the downstream side is faced, with a dry stone wall. Near the middle of the dam is a concrete spillway six feet in width and two feet in depth. There is also an eight inch steel drain pipe in the structure for drawing off the pond.

RORABAUGH DAM NO. 2.

Upstream about two hundred feet from the dam last described, at a point where the drainage area contributory is less than one-half a square mile, is a second dam owned by James E. Rorabaugh.

This dam, which was built in 1930, is an embankment composed of earth and dry stone, faced and capped with concrete. It is seventy feet in length and seven or eight feet in height above the streambed. A concrete spillway, ten inches deep and about four feet wide, is located near the middle of the dam.

The pond formed by the dam has a capacity of somewhat less than a million gallons and is used as a pleasure and ice pond.

HOWLETT DAM.

Stevens Brook rises just across the Massachusetts-Connecticut boundary line in the northeast corner of the town of Stafford, Connecticut, flows north-east into and across the corner of the town of Wales, and through the town of Holland to Holland Brook, into which it empties about one-half of a mile upstream from the Hamilton Woolen Company dam. Stevens Brook is four miles in length and has a total drainage area of about four and one-half square miles.

On this brook about two thousand feet upstream from its mouth, at a point in the brook, where the drainage area contributory is four and one-third square miles, was located a dam on property now or formerly belonging to Oliver Howlett, Holland, Mass. At one time there was a fulling mill attached but inasmuch as there are only traces of the dam left no further description is necessary.

CUMMING DAM NO. 1. (FORMERLY DWIGHT BUTTERWORTH DAM).

About a mile upstream from the Howlett dam, last described, at a point in the brook where the drainage area contributory is three square miles, are the remains of a dam belonging to W. F. Cummings, Holland, Mass. An establishment for

making lamp-wicks was formerly connected with this dam, but this industry discontinued operations over eighty years ago and the dam and mill were abandoned. At the present time there is nothing left, of the mill, and the little remaining portion of the dam offers no obstruction to the natural flow of the brook.

CUMMINGS DAM NO. 2. (FORMERLY DWIGHT BUTTERWORTH DAM).

Three hundred feet or thereabouts upstream is another dam owned by W. F. Cummings. This is an earthen embankment faced downstream with stone work, one hundred and ten feet in length and twelve feet in height. The sawmill attached was closed down for good in 1914, and the dam is now a derelict with an open passage-way through it for the natural flow of the stream.

WING DAM.

This dam, belonging to G. H. Wing, Springfield, Mass., is located on a very small tributary, which joins Stevens Brook from the north near the Holland-Wales boundary line. The dam is about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is only about one-tenth of a square mile.

The structure is an earthen embankment faced downstream with dry stone masonry, one hundred and fifty feet in length and five feet in height. The spillway or overflow is a swale across the top of the embankment, located about thirty-five feet from the east end of the structure. The embankment is nine feet wide on its top and is of heavy section.

NATURAL PONDS

There are two natural ponds in Holland. One is the Holland Pond, which is situated about one mile north of Holland Center on Holland Brook. It is a large body of water, which covers sixty-eight acres and has a drainage area contributory of twenty-five square miles.

The other is Lost Pond, situated about two miles southwest of Holland Center. This is a small natural body of water not over a couple of acres in area and with a drainage area contributory of only one-tenth of a square mile.

There are no dams across the outlets of these two ponds.

H O L Y O K E

In Holyoke there are seventeen dams. Of these one is on the Connecticut River and belongs to the Holyoke Water Power Company. Six are on Black, Tannery and Whiting Street Brooks and are the municipal storage and intake dams of the City of Holyoke Water Works. Two are on Tannery Brook downstream from the municipal dam on that brook, two on City Farm Brook, one on a tributary of City Farm Brook, two on Trout Brook, two on Broad Brook, and one on a small tributary of the Connecticut River. There are no natural ponds in Holyoke although formerly Ashley and Wright reservoirs were natural ponds.

HOLYOKE WATER COMPANY DAM.

The Connecticut River rises in the Connecticut Lakes in Northern New Hampshire and flows southerly between New Hampshire and Vermont across Massachusetts and Connecticut into Long Island Sound. It is three hundred and forty-five miles in length and has a total drainage area of eleven thousand three hundred and forty-five square miles, one hundred and five of which are in Canada.

In Massachusetts the river forms a part of the boundary line between Hampden and Hampshire Counties, being the boundary line between the City of Holyoke in the one and the Town of South Hadley in the other. At the top of the rapids between Holyoke and the village of South Hadley Falls, where the drainage area contributory is eight thousand one hundred and eighty square miles, is located the Holyoke Dam, so-called, built and owned by the Holyoke Water Power Company. (Note:- The U. S. Geological Survey gives the drainage area at Holyoke as 8,390 square miles.)

This dam is a gravity stone masonry spillway structure of the Ogee type, one thousand and twenty feet in length between abutments and thirty feet in height. It is built on a ledge foundation and on top of this ledge along its toe is laid a horizontal rubble masonry apron covered with concrete to protect the toe from being undermined by erosion.

The top 5 feet or crest of the dam is of cement concrete. This was installed in the summer of 1936 to replace the original stone crest which had been dislodged, apparently by the battering of huge ice cakes in the memorable flood of that year.

The fall developed by the dam and rapids is about sixty feet. To the dam is attached a system of canals, along the banks of which, are located the industrial establishments of the City of Holyoke, which are served by the power developed by the dam and canals, the wheel installation being in the neighborhood of fifty-five thousand horse-power.

The construction of the dam was started in 1892 and finished in 1896. With flashboards two and one-half feet in height on the dam, the pond formed backs up water above Northampton to the town of Hatfield and covers about two thousand two hundred and fifty acres. Without flashboards, the pond formed, when level with the crest of the dam, covers about fifteen hundred acres.

CITY OF HOLYOKE WATER WORKS DAMS

The City of Holyoke has erected and maintains six water works dams within the limits of the City of Holyoke.

ASHLEY RESERVOIR DAM.

This dam is located across the outlet of Ashley Reservoir in which Black Brook, or as it is sometimes called, Bear Hole Brook rises. It is an earthen embankment two hundred and fifty feet in length and nine feet in height. It has two spillways of adequate capacity by which the waste water discharges into Black Brook and flows southerly into West Springfield to the Westfield River.

Ashley Reservoir is a natural pond, which was raised by the dam thrown across its outlet. It is located in the southwestern part of the city near the West Springfield town line, and was taken as a water supply in 1872. The surface area of the reservoir is two hundred and eighty-six acres, its drainage area three square miles and its capacity about fifteen hundred millions of gallons.

BRAY RESERVOIR DAM.

The Bray Reservoir dam, built in 1880 on the Bray Brook, a tributary of Ashley Reservoir, is an earthen structure one hundred and sixty-five feet in length, twenty-five feet in height, and twelve feet wide on its top. It is located about two hundred feet from the western bank of the Ashley Reservoir, has a drainage area of eight-tenths of a square mile, a surface area of fifteen acres and a capacity of sixty millions of gallons. The overflow is an open channel in the natural ground about two hundred feet west of the dam.

HIGH SERVICE RESERVOIR DAM.

The High Service reservoir dam was completed in 1904 and is built on another tributary emptying into Ashley Reservoir toward its west end. The dam is located about one thousand feet upstream from the mouth of the tributary where the elevation of the ground is one hundred and eight feet higher than Ashley Reservoir, at a point where the drainage area is about one-half a square mile.

The dam is an earthen embankment seven hundred and thirty-five feet in length, thirty-three feet in height and twenty-five feet wide on its top. Besides the dam proper, there extends from its west end an earthen dike nine hundred feet in length and fourteen feet in height. The spillway of the dam is ten feet in length and discharges the waste water over solid ledge into a channel connected with the bed of the brook below the toe of the structure. The surface area of the reservoir is sixty-one acres, and its capacity is three hundred and fifty-four millions of gallons.

TANNERY BROOK RESERVOIR DAM.

Tannery Brook, which lies in close proximity to Ashley Reservoir but is not a tributary thereof, rises in the City of Holyoke on the east slope of Sheldon Hill, flows southeasterly to a point near the Holyoke-West Springfield boundary line, thence in Holyoke along that boundary line to the Connecticut River. It is three and one-quarter miles in length and has a total drainage area of two and one-half square miles.

At the point where the highway leading from the City of Holyoke to the City of Westfield crosses the brook, where the drainage area is a little over one-half a square mile, is located the Tannery Reservoir dam. It is one hundred and fifty feet in length, about nine feet in height, and forms the highway embankment in which the spillway is located. The spillway is built on the upstream side of the highway and connects with a pipe or culvert laid through the highway. The surface area of the reservoir is about six acres and its capacity two millions of gallons.

WHITING STREET INTAKE RESERVOIR DAM.

There are two dams located in close proximity to each other on Whiting Street Brook in the northerly part of the City of Holyoke, at the foot of Mount Tom. Whiting Street Brook rises on the easterly slope of Mount Tom and flows southeasterly emptying into the Connecticut River, at a point two miles upstream from the Holyoke dam, described above, and two miles downstream from Smith Ferry, so-called. It is about two miles in length and has a total drainage area of about two square miles.

About one-half mile upstream from its mouth, where the drainage area is a little over one and one-half square miles, is located the Whiting Street Intake Reservoir dam, built in 1884. It is a stone masonry structure one hundred and forty-one feet in length and fifteen feet in height. Its spillway is twelve feet in length and the area of the reservoir formed is only an acre. This reservoir is known as the Whiting Street Intake, from which the water is taken in a pipe to the distribution system.

WHITING STREET STORAGE RESERVOIR DAM.

About six hundred feet upstream from the Intake Reservoir dam, last described, is a second dam, which forms the Whiting Street Storage Reservoir. This dam as built in 1888-89 was a rough sandstone structure of heavy section, twenty-two feet in height and seventeen hundred and seventy-three feet in length. The dam having been subject every year to ice thrust, it was necessary to keep an open channel along the upstream face. To increase the factor of safety against this ice thrust the dam was backed on the downstream side with a heavy earthen embankment. This work was done in 1929 and added greatly to the stability of the structure. The overflow is about sixteen feet in length and located near the south end of the dam. It is provided with a concrete crest one and one-half feet below the top of the dam.

The reservoir formed has a surface area of approximately one hundred and twenty acres, a capacity of about five hundred millions of gallons, and a drainage area contributory of about one and one-half square miles.

All these dams described under City of Holyoke Water Works Dams are under constant supervision of the officers of the Holyoke Water Department.

COTE DAM.

On Tannery Brook (described with the City of Holyoke Water Works Dams in connection with Tannery Reservoir) at a point about a mile upstream from its mouth, where the drainage area contributory is one and one-third square miles, is a dam belonging to Louis Cote, Jr.

It is an earthen embankment two hundred and forty feet in length, twelve feet in height, and eight feet in width on top. The spillway or overflow is one hundred feet from its north end and is built of concrete. It is seven feet in length with its crest four and one-half feet below the top of the embankment. There are flashboards one and one-half feet in height on the crest of the spillway. The pond formed by the dam is two and one-half acres in area and is used as an ice pond.

EGER DAM.

Upstream about fifteen hundred feet from the Cote dam, last described, in close proximity to the New York, New Haven & Hartford Railroad right of way, at a point where the drainage area contributory is one and one-quarter square miles, is a dam belonging to Herman Eger of Lower Westfield Road, Holyoke, Mass.

It is an earthen embankment one hundred and ten feet in length and five feet in height. The overflow is a concrete wall about ten feet in length. The pond formed covers about one-third of an acre, and is a shallow body of water used as an ice pond.

CARPENTIER DAM.

City Farm Brook is a tributary of Tannery Brook, rises in the same locality as the latter, flows nearly parallel and empties into Tannery Brook near the New York, New Haven & Hartford Railroad right of way in the southern part of the city. City Farm Brook is about two miles in length and has a total drainage area of a little less than a square mile.

About two thousand feet upstream from the mouth of this brook, and on the north side of Lower Westfield Road, at a point where the drainage area is three-quarters of a square mile, is a dam belonging now or formerly to V. Carpentier, Lower Westfield Road, Holyoke, Mass. It is an earthen embankment three hundred and fifty feet in length and seven feet in height, with its downstream face perpendicular and kept in place by railroad ties.

The overflow is located one hundred feet south from the north end of the structure. It is a concrete wall one foot in thickness built in the upstream slope of the structure, from which an overflow channel extends below the toe of the dam.

The pond formed covers about two acres and is used as an ice pond.

FRANK BRAY DAM.

The second and last dam on City Farm Brook is located on the north-westerly side of the Westfield Road, so-called, about fifteen hundred feet southerly from Hitchcock Street, at a point where the drainage area contributory is somewhat less than a quarter of a square mile, and belongs to Frank G. Bray, Westfield Road, Holyoke, Mass.

It is an earthen embankment built along the highway, two hundred and fifty-five feet in length and six feet in height. There are two spillways in the structure. Both of these are swales that discharge into separate wells built on the downstream side of the embankment.

From each well is laid a pipe which conducts the waste water under the highway. The pond is very small and used as an ice pond. The top of the dam is about four feet higher than the highway adjacent.

DWIGHT BRAY DAM.

This structure is located near the southeasterly side of the Westfield Road, about fifteen hundred feet southerly from Hitchcock Street, on a tributary of Tannery Brook, at a point where the drainage area contributory is only one-tenth of a square mile, and belongs to Dwight R. Bray, Westfield Road, Holyoke, Mass.

It is an earthen embankment two hundred and forty-four feet in length and six feet in height. The overflow is located at its south end. The structure formed a pond of about an acre in area. For some years, however, the pond has not been used for cutting of ice and the dam has been breached to make a free waterway through it.

KENNEDY DAM.

Trout Brook rises in Holyoke about one-half mile north of Whiting Street Reservoir and flows northeast, a distance of about two miles, to the Connecticut River into which it empties about a mile upstream from Smith Ferry. Its total drainage area is two square miles.

About two thousand feet from its mouth, at a point where the drainage area contributory is a little more than one and three-quarters square miles, is a dam belonging to P. J. Kennedy of Holyoke, Mass. It is a dry masonry structure backed upstream with earth, one hundred and ten feet in length and twenty feet in height.

The overflow is at the north end and is twenty-five feet in length with its crest two feet below the top of the dam. The structure is built on rock ledge which is the top of a cascade. Through the dam an opening has been made ten feet or thereabouts in width, and to a depth of about seven feet below the crest, making practically a free passage for the water.

STATE RESERVATION DAM (BRAY LAKE).

About one-half mile upstream from the Kennedy dam, last described, and three-quarters of a mile northwest of Smith Ferry, at a point where the drainage area contributory is one and one-half square miles, is a dam which forms Bray Lake on the State Reservation.

This structure is an earthen embankment four hundred and sixty feet in length and nine feet in height. Its top is eighteen feet in width and used as a roadway. The overflow, which is located one hundred and thirty-two feet from the north end of the dam, consists of two 48 inch iron pipe culverts which extend under the roadway and discharge into an open concrete channel.

BLUEMER DAM NO. 1.

Broad Brook rises in Holyoke about three-quarters of a mile southwest of the Whiting Street Reservoir and flows southwesterly to Rock Valley, thence northerly through a corner of Southampten into Easthampton where it empties into the Manhan River at a point about a mile east of the center of Easthampton.

Broad Brook is ten miles in length and has a total drainage area of twelve and one-half square miles.

About seven and one half miles upstream from the mouth of the brook, and four hundred feet downstream from the Rock Valley Road in West Holyoke, at a point where the drainage area contributory is one and one-third square miles, is a dam owned by Charles W. Bluemer, Rock Valley Road, Holyoke, Mass.

The dam is a stone masonry structure backed with earth on the downstream side, eighty feet in length and six feet in height.

The spillway section, in the center of the dam, has been lowered by the dislodging of stones, and the bottom of the pond has silted in so that the structure backs up little or no water.

The pond formerly covered about one acre and furnished power to run a cider mill. The mill has not been in operation for some years and only the foundations remain.

BLUMER DAM NO. 2.

Upstream about five hundred feet from the last described dam, and just north of the Rock Valley Road, at a point where the drainage area contributory is one and one-quarter square miles, is a second dam owned by Charles W. Blumer.

The dam is a stone masonry structure seventy feet in length and twelve feet in maximum height above the stream bed. The center or spillway section is a heavy concrete wall backed with stone, about twenty feet in length and eight feet in height above the stream bed. The pond formed is about one-quarter of an acre in area and is used for watering stock, etc.

It appears that this dam was built in colonial times and furnished power to a cotton mill, which was later converted into a cider mill. The mill was burned down in 1893 and only a trace of it remains at present.

SKINNER DAM.

This dam is built on a very small tributary of the Connecticut River which rises about a mile southeast of Mt. Tom, and flows easterly, emptying into the river about one and one-half miles above the Holyoke Dam. The dam is located about one thousand feet west of Northampton Street, and has a drainage area contributory of less than one-half a square mile. It is owned by William Skinner, 2nd, of Holyoke.

The dam is an earthen embankment about one hundred feet in length, ten feet in height and twelve feet in width on top, with side slopes of two to one. Near the center of the structure is a heavy rough stone overflow eight feet in width, with its crest about two feet below the top of the embankment. Besides the dam proper, there is also a low earthen dike, two or three feet in height, which extends from the dam along the southerly side of the pond. The pond formed is shallow and covers less than one half an acre. It is used as a pleasure pond.

NATURAL PONDS

There are no natural ponds in Holyoke now although, formerly Ashley and Wright reservoirs were natural ponds.

LONGMEADOW

There are four dams in Longmeadow, one on Wheel Meadow Brook, one on Longmeadow Brook, and two on tributaries of Longmeadow Brook. There are no natural ponds in Longmeadow.

HANDY DAM.

Wheel Meadow Brook rises about one-half a mile east of Longmeadow Street in Longmeadow Center and flows westerly to the Connecticut River into which it empties about a mile downstream from the Longmeadow-Springfield boundary line. It is one and one-half miles in length and has a total drainage area of three-quarters of a square mile.

About one mile from its mouth, and five hundred feet east of Longmeadow Street, at a point where the drainage area contributory is one-half a square mile, is a dam owned now or formerly by H. L. Handy, Longmeadow, Mass.

It is an earthen embankment one hundred feet in length, thirteen feet in height, and ten feet in width on top. The spillway is a brick well to which is connected a two foot diameter brick culvert laid through the dam.

In November, 1932, apparently, as the result of the blocking of the spillway by fish screens at the time, the pond topped the dam, causing a breach or washout. This breach has not been repaired and at present there is a free waterway through the structure.

The pond formerly covered about one and one-half acres and, it appears, was used as a fish nursery by the United States Department of Commerce.

LONGMEADOW COUNTRY CLUB DAM (CLUB REALTY CO. DAM).

Longmeadow Brook rises near the Longmeadow-East Longmeadow boundary line and flows west to the Connecticut River, into which it empties about a mile upstream from the Massachusetts-Connecticut boundary line. It is four miles in length and has a total drainage area of four square miles.

About two miles upstream from its mouth and a mile southeast of Longmeadow Center, at a point where the drainage area contributory is three square miles, more or less, is located a dam belonging to the Longmeadow Country Club (Club Realty Company), Springfield, Mass. It is an earthen embankment one hundred and sixty feet in length, nineteen feet in height and ten feet in width on top. The overflow or spillway is located at the north end of the dam and is ten feet in length, with its crest five feet below the top of the dam. It discharges into a channel connected with the bed of the brook at a point downstream from the toe of the structure. The spillway and upper stretch of the channel are built of concrete.

KRIMMER DAM.

About a mile and three-quarters upstream from the Longmeadow Country Club Dam, last described, on a small tributary of the north branch of Longmeadow

Brook, at a point where the drainage area is only about one-quarter of a square mile is a dam belonging to Eugene Kriener, William Street, Longmeadow, Mass.

The dam is an earthen embankment fifty feet in length, ten feet in height, and fourteen feet in width on top. Its upstream face is paved with field stone. The overflow is an eighteen inch pipe laid through the foundation of the structure from a stop plank well located at the upstream toe. The dam forms a pond of nine acres, which is used as a fishing and pleasure pond. The grounds around the pond are known as Turners Park.

LONGMEADOW COUNTRY DAY SCHOOL DAM.

This dam was a small earthen structure of no importance, located on the small brook which rises about one-quarter of a mile east of Longmeadow Center and flows southerly to Longmeadow Brook. The dam was built about nine years ago, but is now a derelict with a free passage through it for the stream.

NATURAL PONDS

There are no natural ponds in Longmeadow.

LUDLOW

There are eleven dams and seven natural ponds in Ludlow. Of the dams one is on the Chicopee River, namely, that belonging to the Ludlow Manufacturing Associates, described under Chicopee River Dams, three are on Higher Brook, three on tributaries of Higher Brook, two on Broad Brook, one on a tributary of Broad Brook and one on Stony Brook.

BURELLE DAM.

Higher Brook rises on the south slope of Facing Hills, flows southerly and westerly to the Chicopee River into which it empties about a mile downstream from the Ludlow-Chicopee boundary line. It is nine miles in length and has a total drainage area of eleven and one-third square miles.

About two miles upstream from its mouth, in the southwest corner of Ludlow, at a point where the drainage area contributory is ten and one-quarter square miles, are located the remains of an old dam belonging to M. Burelle, Ludlow, Mass. This structure was an earthen embankment faced downstream with dry stone masonry, one hundred feet in length and about ten feet in height, and having the spillway in the center. The small portion of the dam, which now remains, forms no pond and offers no obstruction to the free passage of the brook. To this dam and pond, which covered about six acres, were attached a gristmill and a batting mill, both being in operation in the seventies.

BLOCK DAM.

About a mile upstream from the Burelle dam, last described, at a point where the drainage area contributory is eight and one-third square miles, is located a dam belonging to Samuel Block, 58 Bancroft Street, Springfield, Mass.

This structure is an earthen embankment one hundred and fifty-six feet in length, ten feet in height, and thirty feet in width on top. It is faced upstream in part with a concrete wall, one foot in thickness, and downstream with dry stone work. The spillway is twenty-four feet in length and is located within fifteen feet of the west end of the structure, with its crest about one and one-half feet below the top of the dam.

The dam has been breached and a free passage established for the flow of the brook, so that there is no pondage formed at present. When the dam was in service it formed a pond covering about ten acres.

To the structure was attached a sawmill and sash and blind factory, known as the Harris Mills, which burned down in 1924.

TOWN OF LUDLOW VETERANS' PARK DAM.

About two miles upstream from the Block dam, last described, and about a quarter of a mile north of Chapin Street, at a point where the drainage area contributory is four square miles, is a dam belonging to the town of Ludlow.

The dam is an earthen embankment containing a concrete core wall. It is one hundred and fifty-six feet in length, six feet in height above the stream bed, and thirty-two feet in width on top. The roadway through the park crosses

the top of the dam. The spillway is a bulkhead fitted with stop planks, four feet in width, which discharges into a concrete culvert four feet square laid through the dam.

The structure, which was built in 1935, is located in the Veterans' Park and forms a shallow pleasure pond about eight acres in area.

ACKERMAN DAM NO. 1. (FORMERLY CLARK DAM).

On a tributary of Higher Brook into which it empties from the east about one hundred feet downstream from Ludlow Center, is located a dam belonging to Frank W. Ackerman. It is an earthen embankment eighty-five feet in length and twelve feet in height, faced downstream with dry stone masonry. Its drainage area is one-half a square mile.

The pond formed by the structure is about one and one-half acres in area, and is a shallow body of water. To the structure was attached a sawmill which was in operation until about fifteen years ago. Since then the pond has been used as an ice pond.

ACKERMAN DAM NO. 2. (FORMERLY CLARK DAM).

Upstream about four hundred feet from the dam last described, at a point where the drainage area contributory is somewhat less than one-quarter of a square mile, is located a second dam belonging to Frank W. Ackerman, R.F.D. No. 1, Ludlow, Mass.

The dam is an earthen embankment faced on the upstream and downstream side with stone. It is about one hundred feet in length, ten feet in height, and six feet in width on top.

The overflow is located in the middle of the dam and is built of wood planking, six feet in width and two feet in depth.

The pond formed is used as an ice pond and covers about one-half an acre.

SMITH DAM.

In Ludlow Center, on a small tributary of Higher Brook, at a point where the drainage area contributory is not over one-tenth of a square mile, is a small ice pond dam belonging to Roy L. Smith, Ludlow Center, Mass.

This dam is an earthen embankment fifty feet in length, three and one-half feet in height, and six feet in width on top. The spillway is in the form of a wooden sluice at or near the center of the dam. The dam has been breached, and consequently no pondage is formed.

ALDEN BROTHERS DAM.

Broad Brook rises one and one-half miles south of Belchertown Center, flows southerly through Belchertown to Ludlow and through Ludlow to the Chicopee River, into which it empties about fifteen hundred feet west of the Belchertown-Ludlow boundary line. It is six miles in length and has a total drainage area of eleven and one-half square miles.

About a mile from its mouth and two and one-half miles east of Ludlow Center, at a point where the drainage area contributory is ten and three-quarters square miles, is a dam belonging, now or formerly, to the Alden Brothers, Ludlow, Mass. This is an earthen embankment faced downstream with dry stone masonry, one hundred and sixty feet in length and eleven feet in height.

The spillway is forty-eight feet in length and is located at the west end. It is built of dry stone masonry and covered with a wood plank flooring. On this flooring is built a planked timber framework one foot in height, with its crest two feet below the top of the embankment.

The pond is eight acres in area and a sawmill and cider mill were formerly located here. The dam was built in 1864, and has remained in the hands of the same family ever since.

KOWALZIK DAM.

Upstream about one and one-quarter miles from the Alden Brothers dam, last described, at a point in the brook where the drainage area contributory is five and three-quarters square miles, is a dam belonging to the estate of Anthony Kowalzik, Alden Street, Ludlow, Mass.

This dam has a total length of eighty-five feet and is composed of a dry stone masonry spillway section, fourteen feet in length between two earthen embankments. The center of the structure, or spillway section, is backed with earth and is seven and one-half feet in height above the stream bed over which it is located.

To this dam was attached a horse radish factory, which ceased operating about fifteen years ago. Since that time the factory has not been put to any use. The pond formed is about four acres and is a shallow body of water used as an ice pond.

CITY OF SPRINGFIELD WATER WORKS DAM (LUDLOW RES. DAM).

Ludlow Reservoir is located in the northeast corner of the town of Ludlow about one-half mile upstream on the main tributary of Broad Brook. The reservoir has a surface area of four hundred and forty-eight acres and a total drainage area contributory, including Jabish Brook, of twenty-one square miles.

The dam, which forms the reservoir, is an earthen embankment thirteen hundred feet, more or less, in length, and forty feet in height, with its overflow at the south end. The dam was built in 1874 and is under the constant inspection of the engineering department of the Springfield Water Works.

CARVER DAM.

Stony Brook rises on the west slope of Bagg Hill in the town of Granby, flows two miles southwest into Ludlow, thence northwest through Granby and South Hadley to the Connecticut River, into which it empties one and one-half miles west of South Hadley Center. It is about ten miles in length and has a total drainage area of twenty-one square miles.

In Ludlow City, at a point where the drainage area contributory is five and one-third square miles, is a dam belonging to Elmer H. Carver, West Street, Ludlow, Mass. It is an earthen embankment one hundred feet or thereabouts in length, having a concrete spillway in the center forty-three and one-half feet in length. The height to the spillway is six and one-half feet, and to the top of the embankment about eight feet.

The pond formed by the dam covers about three acres, and furnishes power to operate the sawmill attached.

NATURAL PONDS

The seven natural ponds in the town of Ludlow are Second Pond, Lyons Pond, Chapins Pond, Wood Pond, Pickerel Pond, Shaws Pond, and Minechoag Pond.

SECOND POND.

Second Pond is located one and one-quarter miles southeast of Ludlow City on the headwaters of a tributary of Stony Brook. It has a surface area of thirteen acres and a drainage area of not more than one-quarter of a square mile.

LYONS POND.

Lyons Pond is located one and one-half miles northwest of Ludlow Center on the headwaters of a tributary of Higher Brook. It has a surface area of ten acres and a drainage area of about one square mile.

CHAPIN POND.

Chapin Pond is located one mile north of Ludlow Center and drains into the Chicopee River, although it has no visible outlet. It has a drainage area contributory of not more than a quarter of a square mile and a surface area, according to the 1918 State Report on Water Resources, of thirty-two acres.

WOOD POND.

Wood Pond is situated about one-quarter of a mile south of Chapin Pond, drains into the Chicopee River, covers a surface area of twelve acres, and has a drainage area of about one-eighth of a square mile.

PICKEREL POND.

Pickerel Pond is located one-quarter of a mile west of Chapin Pond, drains into Chicopee River, has a surface area of eleven acres, and a drainage area of about one-eighth of a square mile.

SHAWS POND.

Shaws Pond is situated a half mile west of Pickerel Pond, drains into the Chicopee River, covers a surface of eleven acres, and has a drainage area of about one-quarter of a square mile.

MINECHOAG POND.

Minechoag Pond is located three-quarters of a mile southeast of Wood Pond, drains into the Chicopee River, covers a surface area of eighteen acres, and has a drainage area of about one-half a square mile.

MONSON

There are forty-three dams and two natural ponds in Monson. Of the dams, one is on the Quaboag River, four on small tributaries of the Quaboag River, eleven on Chicopee Brook, twelve on small tributaries of Chicopee Brook from the west, one on a small tributary of Chicopee Brook from the east, one on Conant Brook, two at Squire's Pond, seven on Twelve Mile Brook, three on small tributaries of Twelve Mile Brook, and one on Calkins Brook, which is the largest tributary of Twelve Mile Brook. Of the two natural ponds one is known as Duck Pond and the other as Bald Peak Pond.

CENTRAL MASS. ELECTRIC CO. DAM (FORMERLY FEARING, WHITTEN CO. DAM).

The Quaboag River, which is one of the three principal tributaries of the Chicopee River, flows from the Quaboag Pond in Brookfield to the Brookfield-Warren boundary line, thence through Warren, Brimfield and Palmer to Three Rivers, where it joins the Swift and Ware Rivers to form the Chicopee River. The Quaboag River is twenty-three miles in length and has a total drainage area of two hundred and ten square miles.

In Blanchardville, so-called, upstream about one and one-half miles from Palmer, where the drainage area contributory is one hundred and seventy-seven square miles, is a dam now owned by the Central Massachusetts Electric Company, Palmer, Mass., and which formerly belonged to the Fearing, Whitten Company of Boston, Mass. This dam is not on the main stream but formed a pond nearby, which was fed from the main stream. It is an earthen embankment faced with concrete, seventy feet in length and eight feet in height. The structure is now a derelict having a free water way through it.

The plant attached to the dam was a woolen mill, which afterwards was used for manufacturing leather board. The mill was shut down about fifteen years ago and is now in ruins.

MONSON STATE HOSPITAL DAM NO. 1.

This structure is on a small tributary of the Quaboag River, which rises on the southeast slope of Bald Peak Mountain and flows north to the Quaboag River, into which it empties about half a mile downstream from the mouth of Chicopee Brook. It belongs to the Monson State Hospital and is located on the property of that institution about half a mile upstream from the mouth of the tributary, at a point where the drainage area contributory is about one-square mile.

The dam is an earthen embankment faced on the upstream side with concrete masonry and on the downstream side with rubble masonry. Its length is one hundred and twenty feet and its height twenty feet. The spillway, which is built of concrete, is fifteen feet in length and has its crest one foot below the top of the dam. The pond formed is about one-eighth of an acre and is used as an ice pond.

MONSON STATE HOSPITAL DAM NO. 2.

On a small tributary of the last described tributary, into which it empties just below the last described dam, is another dam belonging to the Monson State Hospital. It is also located on the State Hospital land, one thousand feet

upstream from the mouth of the tributary, at a point where the drainage area is about a quarter of a square mile.

The structure is built of earth excavated, apparently, from the bed of the reservoir which it forms. It is two hundred feet in length and twelve feet in height, with an adequate overflow twelve feet in length at its west end. The reservoir formed covers about one-eighth of an acre and was formerly used as a water supply for the institution. At present it is used as an ice pond.

MONSON STATE HOSPITAL DAM NO. 3.

Upstream about twelve hundred feet from the last described dam at a point where the drainage area is about one-eighth of a square mile, is a third dam belonging to the Monson State Hospital.

This dam is a concrete structure eighty-five feet in length, seven feet in height, and two feet in thickness on top. The spillway is located near the westerly end of the dam and is seven feet in width and six inches in depth.

The structure is no longer in use. It backs up no water and is apparently abandoned for good.

BRIAND DAM.

This structure is on a small tributary of the Quaboag River, into which it empties from the west about one thousand feet north of the Monson-Palmer boundary line, and belongs, now or formerly, to Wilfred J. Briand, 511 Springfield Street, Chicopee, Mass.

It is located on the south side of the Boston Road, about a mile west of Palmer and upstream about two thousand feet from the mouth of the tributary, at a point where the drainage area contributory is three-quarters of a square mile. The dam is an earthen embankment one hundred and ninety feet in length and nine feet in height.

The plan of the dam is curved, concave upstream, and has two spillways or overflows, one in the center of the structure and another near its south end. The structure was originally built by the Wright Wire Company of Palmer to furnish a water supply, but was abandoned for that purpose some years ago. The pond covers about two acres and is now used as an ice and pleasure pond.

CHURCH MANUFACTURING COMPANY DAM (FORMERLY RUBWOOD WHEEL CO. DAM).

Chicopee Brook rises in a small pond southeast of Peaked Mountain, thence flows northerly through the town of Monson to the Quaboag River into which it empties at a point a little southeast of Palmer. It is about eight miles in length and has a total drainage area of twenty-three square miles.

On ascending the brook, the first dam to be found is located about two miles from its mouth, in North Monson, at a point where the drainage area contributory is about twenty-one square miles. It belongs to the Church Mfg. Co., Monson, Mass.

The dam is a masonry faced structure backed with earth. It is eighty-two feet in length and ten feet in height with its west end abutting the highway. Years ago there was attached to this dam a woolen mill which specialized in the production of fancy cassimeres.

MOULTON DAM NO. 1.

About a half mile upstream from the last described dam, at a point where the drainage area contributory is twenty square miles, is located a dam belonging to W. C. Moulton, Monson, Mass. This is a spillway structure ninety feet in length, ten feet in height, and built of dry stone masonry backed with earth.

To the structure are attached a gristmill and sawmill. The gristmill ceased to operate years ago, and the sawmill is run only intermittently. The dam was overhauled and repaired seventeen years ago.

This is a very old mill privilege as it appears that there has been a dam and mill here for over a hundred years.

MOULTON DAM NO. 2.

This dam is on a tributary of Chicopee Brook into which it empties from the west, a short distance above the dam last described. It abutts the west side of the highway and is located at a point where the drainage area contributory is about one-third of a square mile. The pond formed covers about a quarter of an acre and is used as an ice pond. The overflow from the pond passes through a culvert under the highway.

A. D. ELLIS MILLS, INC. DAM (CALLED THE NO. 4 DAM).

On Chicopee Brook, upstream about a mile from the W. C. Moulton Dam No. 1, at a point where the drainage area contributory is fifteen square miles, is a dam belonging to the A. D. Ellis Mills, Inc., Monson, Mass.

It is a masonry spillway structure, fifty-seven feet in length between abutments and eight feet in height. It is backed with earth on the upstream side and provided with a horizontal apron along the toe of the spillway. The pond formed by the structure is small and not over an acre and a half in area. Originally the plant attached was a woolen mill and afterwards a hat factory, which shut down for good ten years ago. The plant, it appears, is now used as a storage building.

A. D. ELLIS MILLS, INC. DAM (CALLED THE NO. 3 DAM).

About a half-mile upstream from the dam last described, at a point where the drainage area contributory is fifteen square miles, is a spillway dam belonging to A. D. Ellis Mills Inc., Monson, Mass., known as the No. 3 dam.

This structure is located just south of the main highway through Monson Center. It is curved in plan, convex upstream, built of heavy granite masonry, fifty-five feet in length and nineteen feet in height. The structure was built in 1908. The plant attached is a woolen mill and a going concern.

RICKETTS & SHAW DAM.

Upstream about one thousand feet from the A. D. Ellis Mills Inc. No. 3 dam, last described, at a point where the drainage area is thirteen and one-half square miles, is a dam belonging to Ricketts & Shaw, Monson, Mass.

The dam is a dry stone masonry structure backed with earth. It is not laid across the stream in a straight line, but its plan forms an angle with the apex downstream and with one of the legs seventy-five feet and the other sixty feet in length. The height of the structure is thirteen feet.

The pond formed covers about four acres, more or less, and is partially filled with silt around the dam. The plant attached is a woolen mill. Previous to about twenty-five years ago, it belonged to A. D. Ellis Mills, Inc. and was known as the No. 2, mill.

A. D. ELLIS MILLS, INC. DAM (CALLED THE NO. 1 DAM).

Five hundred feet upstream from the Ricketts & Shaw dam, last described, at a point where the drainage area contributory is thirteen and one-half square miles, is a dam belonging to A. D. Ellis Mills Inc., known as the No. 1, dam. It is a stone masonry spillway structure backed with earth, eighty feet in length, and sixteen feet in height. A few years ago the dam was repaired and a concrete crest was provided. The plant attached, like that attached to the A. D. Ellis Mills Inc., No. 3 dam, is a woolen mill and a going concern.

MONSON ASSOCIATES CORP. DAM.

About two thousand feet upstream from the A. D. Ellis Mills Inc., No. 1, dam, at a point where the drainage area contributory is five square miles, is a dam, now or formerly, belonging to the Monson Associates Corp., Monson, Mass.

This is a stone spillway structure backed with earth. It is fifty feet in length and eleven feet in height. The pond formed is very small and practically filled with silt. The dam diverts water into a canal and forebay that was connected with the woolen mill located about one thousand feet below. This woolen mill, however, was destroyed by fire a few years ago and has not been rebuilt.

MOULTON DAM NO. 3.

Farther upstream about a mile and a half from the Monson Associates Corporation dam, last described, at a point where the drainage area contributory is about two square miles, is a third dam belonging to W. C. Moulton, Monson, Mass.

It is a dry stone spillway structure backed with earth, seventy feet in length and nine feet in height. The pond formed by the structure is of considerable size from which the water was taken to run a sawmill. Of late years, however, the sawmill has been abandoned, and the pond is now used for the cutting of ice.

ALDRICH DAM.

Upstream about a mile and a quarter from the W. C. Moulton Dam No. 3, last described, and on the westerly side of the state highway to Stafford, Conn. was located the Aldrich pond and dam. At present there is no pond and only a small part of the dam remains.

C. P. BRADWAY DAM NO. 1.

About a half mile upstream from the Aldrich dam, last described, or a mile and three-quarters from the W. C. Moulton dam No. 3, at a point about sixty

feet south of the highway, where the drainage area contributory is a little over a quarter of a square mile, is a dam belonging, now or formerly, to C. P. Bradway, West Stafford, Connecticut.

It is an earthen embankment faced with dry stone masonry to which is attached a work shop long abandoned and now in a dilapidated condition. The dam is about sixty feet in length and eight feet in height. An opening has been made through the structure and a free waterway for the flow of the brook established.

C. P. BRADWAY DAM NO. 2.

Eight hundred feet upstream from the C. P. Bradway dam No. 1, at a point where the drainage area contributory is about a quarter of a square mile is another dam, now or formerly, belonging to C. P. Bradway.

It is an earthen embankment faced downstream with dry stone masonry and upstream with cobblestone laid as a rip-rap. The structure is seventy-five feet in length, eleven feet in height and about thirteen feet in width on top. The pond formed covers about five acres and the water is conveyed therefrom in a pipe to the sawmill at the foot of the hill, five hundred feet below. The "head" or fall created is at least seventy feet. The sawmill has apparently gone out of business for good.

BUMSTEAD ESTATE DAM.

On a tributary of Chicopee Brook, that rises about three-quarters of a mile northeast of Peaked Mountain and flows directly east to Chicopee Brook, into which it empties about half a mile upstream from the Smith Pond, so-called, is a dam, now or formerly, belonging to the Morace Bumstead Estate, Monson, Mass.

This structure is located just west of the highway that crosses the brook one thousand feet from its mouth, and has a drainage area contributory of less than one-quarter of a square mile. It is an earthen embankment faced with dry stone masonry, seventy feet in length and six feet in height. The pond formed, which is used as a fishing pond, is small and only a few feet in depth.

CALKINS DAM.

On a tributary that rises on the east slope of West Hill and flows easterly, southerly and easterly to Chicopee Brook, into which it empties about a half mile downstream from the Smith Pond, so-called, is a dam belonging to Judson R. Calkins, Monson, Mass.

The structure is located about three-quarters of a mile from the mouth of the tributary, at a point in close proximity to the highway that crosses the tributary, where the drainage area is three-quarters of a square mile. It is an earthen embankment faced with dry cobblestone masonry on the downstream side. It is one hundred and forty feet in length, about seven feet in height, and five feet in width on top. The overflow is built of heavy masonry, four feet in width, located in the center of the dam.

The pond formed covers probably ten acres and is used as an ice pond.

ROSS DAM (FORMERLY LABELLE DAM).

Upstream about a mile from the Calkins dam, at a point five or six hundred feet west of the highway, where the drainage area contributory is about one-tenth of a square mile, is a dam, now or formerly, belonging to the Rev. E. M. Ross, East Longmeadow, Mass.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and about three feet in height. The pond formed covers about a quarter of an acre and is used as an ice pond.

MEACHAM DAM.

On a tributary of the brook last described, into which it empties about one thousand feet downstream from the Calkins dam, is a dam, now or formerly, belonging to W. G. Meacham, Monson, Mass. This dam is located about eight hundred feet from the mouth of the tributary, at a point where the drainage area contributory is less than a quarter of a square mile.

It is an earthen embankment eighty feet in length and not over two and a half feet in height. The pond formed covers about an acre and is used as a fishing pond. It seems to be a natural pond raised by the dam.

KASPERZAK DAM.

On a tributary of Chicopee Brook, that rises on the east slope of West Hill and flows east to the Chicopee Brook into which it empties at the A. D. Ellis Mills Inc. No. 1 dam, is a dam belonging to Joseph Kasperzak, Monson, Mass. This structure is located at a point about a mile from the mouth of the stream and about five hundred feet west of the highway, where the drainage area contributory is a half a square mile.

It is an earthen embankment one hundred and eight feet in length and five feet in height. The overflow is a culvert laid through the structure from a well located in the upstream face of the dam. The dam has been breached and a free waterway established so that there is no pondage formed.

C. A. BRADWAY DAM.

On a very small tributary of Chicopee Brook, which it joins about a quarter of a mile downstream from the A. D. Ellis Mills Inc. dam No. 4, above described, is a dam belonging to C. A. Bradley, Monson, Mass. This structure is located on the westerly side of Ely Road at a point where the drainage area contributory is less than a quarter of a square mile.

It is a stone structure fifty feet in length and five feet in height backed with earth. The pond formed by the structure is very small and filled with silt. The dam is now a derelict and backs up no water.

BEAUCAGE DAM.

About one hundred feet upstream from the dam last described and, likewise, on the westerly side of Ely Road, is an ice pond dam belonging to G. J. Beaucage, Ely Road, Monson, Mass. It was built in 1930 of dry stone and earth with a concrete lining wall ten inches in thickness. The dam is only twenty-six feet in length and five feet in height. The spillway is located ten feet from its north end and is four feet in width, with its crest one foot below the top of the dam. The pond formed by the dam is so small that, even, if the structure failed completely no material damage would result from the released water.

SULLIVAN BROTHERS DAM.

Sullivan Brook rises in Smith Pond on the east slope of West Hill, flows northerly and thence easterly through Monson Center to Chicopee Brook, into which it empties about a half mile downstream from the A. D. Ellis Mills Inc. dam No. 4, above described. The brook is about two and a half miles in length and has a drainage area of two square miles. There are four dams on the brook.

The first dam found upon ascending the brook is located at a point about two thousand feet upstream from its mouth, on the north side of Mill Street, where the drainage area contributory is about two square miles, and belongs to William and Cornelius Sullivan, Monson, Mass.

It is a dry stone masonry spillway structure backed with earth, sixty-six feet in length and thirteen and one-half feet in height. The spillway is twenty-six feet in length, with its crest two and one-half feet below the top of the dam. The pond formed by the structure is very small and practically filled with silt. From the pond is laid a pipe about six hundred feet in length to a small artificial reservoir, which is the forebay for the cider mill attached. The cider mill, which is still a going concern, was formerly a box factory.

DEPACE DAM (FORMERLY GOLD DAM.).

About five hundred feet upstream from the Sullivan Brothers dam, at a point where the drainage area contributory is practically two square miles, is a dam belonging to Luigi Depace, Monson, Mass.

It is a dry stone masonry spillway structure backed with earth, thirty-one feet in length between abutments and nine feet in height. The pond formed is very small, and there was formerly attached a wagon shop which, however, has been out of existence for years. In the seventies this wagon shop was operated by one H. Glinn.

BURDICK DAM.

Three hundred feet upstream from the last described dam and across the highway from the latter, at a point where the drainage area is a little less than two square miles, is a dam belonging, now or formerly, to James J. Burdick, Monson, Mass.

It is an earthen embankment two hundred and twenty feet in length and fourteen feet in height, faced downstream with heavy stone. The spillway is thirty feet in length, with its crest two feet below the top of the embankment and is located in the middle of the structure. It is built of derrick stone coped with concrete and backed with earth.

The pondage covers about an acre and is a shallow body of water. To it is attached a machine shop which has not been operated for some time and, apparently, has been shut down for good.

EATON DAM (FORMERLY FLINT DAM).

On the headwaters of Sullivan Brook at the outlet of Smith Pond, so-called, where the drainage area contributory is a quarter of a square mile, is a dam belonging to G. C. Eaton, Pomona Street, Springfield, Mass.

The structure is an earthen embankment faced upstream and downstream with stone riprap. It is one hundred and twenty-five feet in length and six feet in height. Its overflow is located about thirty feet from its north end, and is four feet in length, with the crest eight inches below the top of the dam. Under the overflow is laid a ten inch pipe through the dam. This pipe leads from a concrete well, fitted with movable stop planks, by which the height of the pond can be regulated. The area of the pond is about fifteen acres and it appears that the pond is a natural one raised by the dam. It is now used as a recreation pond.

ANDERSON DAM.

On a small tributary of Chicopee Brook, into which it empties from the east at Monson Center is a dam belonging to W. H. Anderson, Monson, Mass. It is located about half a mile upstream from the mouth of the tributary and three-quarters of a mile west of Monson Center, at a point where the drainage area contributory is half a square mile.

The dam is an earthen embankment curved in plan, concave upstream. Its downstream slope is built of dry cobblestone. The structure is two hundred feet in length, twelve feet in height and ten feet wide at the top.

It is the old dam which formed the Sullivan Ice Pond, so-called, overhauled and repaired. There is a spillway located in the center of the structure and an overflow in the natural ground at the north end. The spillway in the dam is built of concrete, with its crest two feet below the top of the structure. This spillway, in which stop planks are used, is for regulating the height of the pond under normal conditions, as in time of high water, the waste water passes through the overflow located at the north end of the structure. The pond formed by the structure covers about an acre.

TOWN OF MONSON WATER WORKS DAM.

Conant Brook rises in the town of Wales about one and a half miles southwest of Wales Center, flows southwest and then northwest into and through Monson to the Chicopee Brook which it joins at South Monson. Conant Brook is five miles in length and has a total drainage area of about eight square miles.

Upstream about a mile and a quarter from its mouth, at a point where the drainage area contributory is seven and a half square miles, is located a dam belonging to the town of Monson Water Works. It is an earthen embankment faced with masonry on its up and downstream sides, one hundred and fifty feet in length and sixteen feet in height. The spillway is located in the middle of the structure and has a concrete crest two feet below the top of the dam. The pond formed is about two acres in area.

SUTCLIFFE DAMS (FORMERLY SQUIRE DAMS).

On Ingalls Brook, at a point where the drainage area contributory is one-tenth of a square mile, is a dam belonging to R. S. Sutcliffe, Monson, Mass. It is an earthen embankment eighty feet in length and six feet in height.

At the north end of the pond there is another small dam in which the spillway is located. The spillway is twelve feet in length and about six feet in height. The pond formed by these dams covers about four acres and is known as Squire's Pond.

GREEN DAMS.

Three dams owned by the S. M. Green Estate, Springfield, Mass., are located in close proximity to each other, west of Silver Street and about one-half mile east of the Monson-Wilbraham boundary line. One of these dams is built across Twelve Mile Brook (described under Wilbraham) and has a drainage area of about five square miles. The other two are built near the mouth of a small tributary of Twelve Mile Brook from the south, and have a natural drainage area of about one and one-half square miles.

DAM NO. 1.

The first, or dam farthest downstream, is located on the tributary above described, and forms a pond of about one-half an acre in area. The dam is a stone masonry structure backed with earth, one hundred and fifty feet in length and ten feet in height. It has two concrete overflows, one at its south end, about twenty-five feet in length, and the other at its north end six feet in length. The pond formed is about a half an acre in area.

DAM NO. 2.

Upstream on the tributary about two hundred feet from the dam last described, is an earthen dam built in 1922, one hundred and ninety-five feet in length and fifteen feet in height. It is provided with an ample spillway and, together with the dam next to be described, forms one pond of about twenty-four acres in area.

DAM NO. 3.

The next dam, also built in 1922, is on Twelve Mile Brook about five hundred feet east of the dam last mentioned. It is also an earthen embankment one hundred and eighty feet in length and sixteen feet in height. It is provided with an ample spillway.

MACE DAM (FORMERLY GREEN DAM NO. 4).

Upstream on Twelve Mile Brook, about three hundred feet from the twenty-four acre pond formed by the two dams last described, at a point where the drainage area contributory is five square miles, is located a dam belonging now to Dr. R. G. Mace, 167 Longhill Street, Springfield, Mass. and formerly to the S. M. Green Estate. It is an old dry stone masonry structure backed with earth, two hundred feet in length and fifteen feet in height. The spillway is fifty feet in length, with its crest three feet below the top of the dam. This dam, with its pond of about one-half acre in area, was years ago used to furnish power to a flock mill of which only a few foundation stones now remain. The pond is now used as a pleasure pond.

BALDWIN DAM.

About one thousand feet upstream from the Mace dam, last described, where the drainage area contributory is about five square miles, is an earthen dam

belonging to Dr. R. A. Baldwin, 162 Long Hill Street, Springfield, Mass.

This structure is backed by the highway, in front of which is a concrete spillway, discharging into a culvert laid under the highway. The dam is ten feet in height. The pond formed covers about five acres and is now used as a pleasure pond. Years ago it was known as the Davis Pond, to which a flock mill and sawmill were attached.

BUDDINGTON DAM (FORMERLY BALDWIN DAM NO. 2).

About two thousand feet upstream from the Baldwin dam last described, at a point where the drainage area contributory is four square miles, is a dam which belongs to Dr. H. F. Buddington, 958 State Street, Springfield, Mass. This is a dry stone masonry structure backed with earth, two hundred and twenty-five feet in length and about ten feet in height. The length of the spillway, which is in the center of the dam, is forty-five feet, with its crest two feet below the top of the dam.

This dam forms a pond known as Silver Lake, but formerly known as Friday Pond. It covers about five or six acres and is used for fishing and pleasure purposes. Years ago this pond was used as a storage from which water was drawn in a canal to the flock mill and sawmill mentioned under the Baldwin dam.

REMINGTON DAM.

The next and last dam on Twelve Mile Brook from its mouth, is located about two miles upstream from the Buddington dam, last described, at a point where the drainage area is one and one-half square miles, and belongs to William B. Remington of Springfield, Mass.

It is an earthen embankment one hundred and seventy feet in length and fifteen feet in height faced downstream with dry stone masonry. The spillway is twenty-four feet in length with its crest two feet below the top of the dam. Formerly there was a sawmill and a gristmill attached to the structure, but these went out of existence years ago. The pond formed by the structure covers about three acres and, apparently, is now used as a fishing and pleasure pond.

HUMPAGE DAM.

On a tributary which empties into Twelve Mile Brook from the east at a point about one-half mile south of the village of Ellis Mills, is a dam owned by F. R. Humpage, Palmer, Mass. This dam is located about a half mile upstream from the mouth of the tributary, or one-quarter of a mile east of the Monson-Wilbraham town line, and has a drainage area of one square mile.

It is a dry stone masonry structure faced on the upstream side by a concrete wall. It is about seventy feet in length and nine feet in height above the streambed. The overflow is three feet in length, located in the center of the dam.

The pond formed covers about two acres and is used as a pleasure pond.

MAXWELL DAM.

Upstream about a quarter of a mile from the Humpage dam, last described, and just west of the Maxwell Road, so-called, at a point where the drainage area is

about three-quarters of a square mile, is located a dam belonging to Martin R. Maxwell, Monson, Mass.

The dam is an earthen embankment, faced with dry stone masonry, about one hundred feet in length and sixteen feet in height. It is built on a natural rock cascade, which with the height of the dam gave a fall of about twenty-five feet. The overflow is located in the ledge rock near the easterly end of the structure.

To this dam there was long ago attached an "up and down" sawmill. This mill went out of operation over eighty years ago, however, and the pond which covers about a quarter of an acre is practically filled with silt.

BROWN DAM.

This dam is located on a small tributary of Twelve Mile Brook from the east, at a point one and one-half miles south of the Monson-Wilbraham highway, where the drainage area contributory is less than a quarter of a square mile. It is owned by E. L. Brown, Monson, Mass., and was built during 1936 to form a small swimming and pleasure pond of less than one-quarter acre in area.

The dam is a concrete wall backed with earth, about one hundred feet in length, six feet in height above the stream bed and eighteen inches in thickness on top. The overflow is a concrete channel three feet in width located in the center of the dam.

NICOLET DAM.

Calkins Brook rises on the west slope of Bald Peak in Monson, flows westerly to the Monson-Wilbraham boundary line, thence through Wilbraham to Twelve Mile Brook into which it empties at Ellis Mills. It is about two miles in length and has a total drainage area of three and a quarter square miles.

About three-quarters of a mile upstream from its mouth, at a point where the drainage area contributory is two and three-quarters square miles, is located a dam belonging to Anna D. Nicolet, Monson, Mass.

It is an earthen embankment faced downstream with cobblestone, one hundred and forty-five feet in length and twenty feet in height. Its top is thirty-one feet in width and was used as a mill yard. The spillway is a sluice gate connected with the mouth of a culvert five by seven feet in section laid through the south end of the dam. The sawmill attached is located against the downstream slope, and after operating intermittently for some years, is now apparently shut down for good. At this place, which was then known as Calkins Mills, gun stocks were made for the Government and brake shoes for the Boston & Albany Railroad.

A few years ago, on the advice of the county, a surface overflow in the form of a swale was added to the structure at the south end. The pond formed is a rather large one, covering about ten acres.

NATURAL PONDS

DUCK POND.

Duck Pond is situated in the western part of the town of Monson, about two miles southeast of South Monson Center, covers about three acres and has about one-quarter of a square mile of drainage area. It has no dam across its outlet.

BALD PEAK POND.

Bald Peak Pond is situated near the top of Bald Peak Mountain about three-quarters of a mile southwest of the Monson State Hospital. It drains into a small tributary of the Quaboag River and has a drainage area of apparently less than one-quarter of a square mile. There is no dam across its outlet.

MONTGOMERY

In Montgomery there are seven dams and one natural pond. Of the dams, three are on Moose Meadow Brook, one on a small tributary of Moose Meadow Brook, one on Sackett Brook, one on Roaring Brook, and one on a tributary of Roaring Brook.

CITY OF WESTFIELD WATER WORKS DAM NO. 1.

Moose Meadow Brook rises in the town of Montgomery on the west slope of Bungy Hill, flows south and southwest through Montgomery and Westfield to the Westfield River into which it empties about two miles downstream from the Westfield-Russell boundary line. It is six and a half miles in length and has a total drainage area of six and a half square miles.

Near its intersection with the Montgomery-Westfield boundary line, at a point where the drainage area contributory is four and three-quarters square miles, is located a dam belonging to the City of Westfield Water Works. This dam is a stone masonry structure backed with gravel on a rock foundation and was built in 1874. It is two hundred feet in length and about thirty feet in height. The spillway is thirty-one feet in length, with its crest two and a half feet below the top of the dam.

The reservoir formed by the structure is the Intake of the Montgomery system of the Westfield Water Supply. It has an area of one and a quarter acres and a capacity of four million gallons.

CITY OF WESTFIELD WATER WORKS DAM NO. 2.

About two and a quarter miles upstream from the Intake Reservoir, at a point where the drainage area contributory is two square miles, is located the Westfield Water Works Storage Reservoir. This covers a surface area of about thirty-eight acres and has a storage capacity of one hundred and twenty million gallons. The dam forming the reservoir is an earthen embankment three hundred and sixty feet in length and about thirty feet in height. It was built in 1874.

The spillway is located at the east end of the dam and is built of concrete. It is nineteen feet in length with its crest five feet below the top of the dam. In 1936 a concrete bridge was built across the overflow, and the piers of this bridge divide the overflow into three bays each six feet in length, and fitted with grooves for flashboards. The spillway discharges into a concrete channel which conducts the water away from the toe of the dam to the brook below, a distance of about three or four hundred feet.

CITY OF WESTFIELD WATER WORKS DAM NO. 3.

The next and third dam belonging to the Westfield Water Works on Moose Meadow Brook is about a half mile upstream from the storage reservoir dam, at a point where the drainage area is one and a half square miles.

This is a stone structure sixty-five feet in length and seven feet in height with its spillway at the east end. It was a sawmill dam before the Westfield Water Works purchased it, apparently for the protection of the watershed. Since it was purchased, it is used only as a storage dam.

All these three reservoir dams are under the constant supervision of the officers of the City of Westfield Water Department.

HALL DAM.

On a small brook that is a tributary of Moose Meadow Brook, into which it empties at the northwest corner of the Westfield Storage Reservoir, is an ice pond dam belonging to Andrew J. Hall, Montgomery, Mass.

It is located about one-half a mile upstream from the reservoir, at a point where the drainage area is not more than one-quarter of a square mile. The dam is a stone structure about thirty-five feet in length and six feet in height. The pond formed, however, is only thirty-five by fifty feet and shallow. Ice is no longer cut on the pond and both pond and dam are abandoned, the latter becoming a derelict.

DEAN DAM.

Sackett Brook rises in the town of Montgomery on the southeast slope of Bungy Hill, flows southeasterly through Montgomery and Southampton to the West Branch of the Manhan River, into which it empties at Russellville. Sackett Brook is two and a quarter miles in length and has a total drainage area of two and one-third square miles.

About a half mile northeast of Montgomery Center or two miles from the mouth of the brook, at a point where the drainage area contributory is one-third of a square mile, is located a dam belonging to Oscar B. Dean, Montgomery and Springfield, Mass. It is an earthen embankment one hundred and fifty feet in length and five feet in height, faced upstream with a stone masonry wall one foot in thickness. The spillway is located seventy-two feet from its north end. An opening has been made through the structure, and there is no longer any pondage formed.

CLARK DAM.

Roaring Brook rises on Norwich Hill in the town of Huntington, flows west and south through Montgomery to the Westfield River, into which it empties about a half mile downstream from the Montgomery-Huntington boundary line. It is five miles in length and has a total drainage of five and a half square miles.

About fifteen hundred feet upstream from its mouth, at a point where the drainage area contributory is five and one-third square miles, are located the remains of a dam belonging to Ledru R. Clark, Box 25, Huntington, Mass. This structure had a sawmill attached which was known in the seventies as the Fowler sawmill. At present only traces of the dam and mill remain, the latter having ceased operation over forty years ago.

TINDAL DAM.

Two miles northwest of Montgomery Center on a tributary of Roaring Brook, at a point where the drainage area contributory is one-quarter of a square mile, is an ice pond dam belonging to David Tindal, Montgomery, Mass.

It is an earthen embankment, faced upstream and downstream with stone masonry, with the upstream masonry plastered. The overflow is located in the dam thirty feet from the south end. The length of the structure is about two hundred feet and its height five and a half feet. The pond formed is less than an acre

in area, and if suddenly released by failure of the structure would cause no material damage.

NATURAL PONDS

SHATTERACK POND.

Shatterack Pond is the only natural pond in the town of Montgomery. It is located about one-half mile southwest of Montgomery Center on the headwaters of Shatterack Brook, has a surface area of about seventeen acres, and a drainage area of not over a quarter of a square mile.

P A L M E R

There are twenty-two dams and three natural ponds in the town of Palmer. Of the dams one is on the Chicopee River, namely the Otis Company dam already described under Chicopee River Dams, three on Swift River, one on a small tributary of the Swift River, two on the Ware River, four on Gates Brook, three on a tributary of Gates Brook, one on the Quaboag River, two on Mt. Dumpling Brook, four on Graves Brook, and one on King's Brook. The natural ponds are Lily Pond, Brown Pond and Pattaquattic Lake.

OTIS COMPANY DAM AT BARRETT'S JUNCTION (FORMERLY BOSTON DUCK CO. DAM).

Swift River rises in North Pond in the town of Orange, Franklin County, thence flows into and across Hampshire County to Bondsville, from which place to its junction with the Ware River, at or near the village of Three Rivers it forms the Hampden-Hampshire County line. Its length from North Pond is about thirty miles and its total drainage area two hundred and thirteen square miles.

About two miles upstream from its mouth, at Barrett's Junction, so-called, are traces of an old wooden dam which was one hundred and twenty feet in length and ten feet in height. To this structure was attached many years ago the Springfield Soapstone Company plant, where a head or fall of twenty feet was developed by the building of a long canal between the dam or mill pond and the plant. The soapstone plant went out of existence years ago.

In 1918 or thereabouts, the property passed into the hands of the Boston Duck Company, from which it was recently purchased by the Otis Company. Neither of these latter owners made any attempt to restore the dam and the small portion that now remains is of no account.

OTIS COMPANY DAM AT BONDSVILLE (FORMERLY BOSTON DUCK CO. DAM).

Upstream in the village of Bondsville, at a point where the drainage area contributory is one hundred and ninety-five square miles, is a dam belonging to the Otis Company.

It is a stone masonry spillway structure one hundred and forty-six feet in length and fourteen feet in height. Along its downstream toe is laid a horizontal apron, fifteen feet in width and built of huge granite blocks. The upstream side of the dam is filled with cobblestones and silt. At its east end is a forebay from which a canal is laid to the hydro-electric power house some hundreds of feet downstream, in which place electric energy is generated for the company's mills. The pond formed by the structure has a surface area of about six acres.

OTIS COMPANY DAM AT LUCKVILLE (FORMERLY BOSTON DUCK CO. DAM).

About a half mile upstream from the last described dam, at a point where the drainage area contributory is one hundred ninety-four and a half square miles is another dam belonging to the Otis Company.

This is a stone masonry spillway structure one hundred and thirty-two feet in length and fifteen feet in height. Like the Bondsville dam, there is also laid along the toe of the structure a horizontal apron fourteen feet in width built of huge granite blocks. From the south end of the dam the water is taken in a canal to the water wheels in the mills attached. The pond formed is fifty-seven acres in area.

OTIS COMPANY RESERVOIR DAM (FORMERLY BOSTON DUCK CO. DAM).

On a small tributary of the Swift River, into which it empties just above the Duckville dam, is another dam belonging to the Otis Company. This structure is located about one thousand feet upstream from the mouth of the tributary, at a point where the drainage area is about a quarter of a square mile.

The dam is an earthen embankment four hundred and fifteen feet in length, ten feet in height and ten feet in width on top. It forms a reservoir of about eight acres and was built for the purpose of a water supply and fire protection for the Duckville Mills. Through the dam is laid an overflow pipe twelve inches in diameter, which experience has shown is adequate, as the pond never has topped the embankment since the reservoir was built years ago.

COLGAN & SHERMAN INC. DAM NO. 1. (FORMERLY THORNDIKE CO. DAM NO. 1).

Ware River, the largest of the three rivers that form the Chicopee River, rises in the town of Westminister, Worcester County, flows southwesterly to Ware in Hampshire County, thence to and through Palmer to Three Rivers, where it joins the Swift River. Its drainage area is two hundred and twenty-one square miles.

In Thorndike, about a mile and a half upstream from its junction with the Swift River, where the drainage area contributory is two hundred and eighteen square miles, is located a dam belonging to Colgan & Sherman Inc., Palmer, Mass.

The dam is a stone masonry spillway structure laid on a ledge and hardpan foundation. It is one hundred and sixty feet in length and fourteen feet in height. The structure was repaired and a new crest added about twenty years ago. The pond formed is about four acres in area and the water is taken therefrom in a canal to the water wheels in the mill attached.

COLGAN & SHERMAN INC. DAM NO. 2. (FORMERLY THORNDIKE CO. DAM NO. 2).

About a half mile upstream from the dam last described, at a point where the drainage area contributory is practically two hundred and eighteenssquare miles is located another dam belonging to Colgan & Sherman Inc., Palmer, Mass.

It is a gravity masonry concrete spillway structure of the Ogee type, which replaced, about twenty-two years ago, an old log crib structure. The dam is one hundred and seventy-four feet in length and seventeen feet in height.

From the easterly abutment of the dam proper there extends an earthen dike about two hundred feet in length and ten feet in maximum height. In the phenomenal flood of March, 1936 this dike was topped and a section of it washed out. The breach has been temporarily repaired by the construction of a kind of planked timber frame structure, filled with rock, and the whole top of the dike raised to a height of about seven feet above the crest of the dam.

The pond formed by the dam covers about twenty acres and is used as a storage for the mill at the lower dam.

HOLBROOK DAM NO. 1. (FORMERLY THORNDIKE CO. DAM NO. 3).

Gates Brook rises in Lake Thompson, about a mile southeast of Palmer Old Center, and flows north to the Ware River into which it empties about a mile upstream from Whipple's Station. The brook is three miles in length and has a total drainage area of four square miles.

At a point a short distance upstream from its mouth, where the drainage area is very little less than four square miles, is a dam belonging to Arthur W. Holbrook, Palmer, Mass. This dam was formerly owned by the Thorndike Company.

It is a stone masonry spillway structure backed with earth, thirty-five feet in length, six feet in height, with its east end abutting the Ware River branch of the Boston & Albany Railroad and its west end abutting the highway. The waste water after crossing the spillway, is conveyed through a culvert laid under the highway. The dam forms Forest Lake, formerly known as Newell's Pond, a large body of water which covers an area of sixty-two acres. In the seventies there was attached to this dam a sawmill of which only traces are now left.

STATE FISH HATCHERY DAMS.

There are two dams about one thousand feet apart, located about one mile northeast of Palmer Old Center on Gates Brook, where the drainage area contributory is two square miles. These dams belong to the State of Massachusetts and form ponds for the State Hatchery.

The upper dam is a concrete spillway structure sixty feet in length and nine feet in height. It is of light section, and was built in 1911 or 1912. The pond formed is very small. From it water is drawn through a pipe to the hatchery etc.

The lower dam is a low earthen embankment only a few feet in height, which forms a shallow pond about two acres in area.

LIEGE DAM (LAKE THOMPSON DAM).

On the outlet of Thompson Lake, which is the headwaters of Gates Brook, at a point where the drainage area contributory is one square mile, is a dam belonging now or formerly to P. H. Liege and formerly to the John W. Boyle Realty Company, Springfield, Mass.

The dam is an earthen embankment, faced upstream with a concrete wall about one foot in thickness and downstream with dry stone masonry two feet in thickness at the top. Its length is eighty-two feet, height eleven feet, and its width on top thirty-four feet.

The overflow or spillway, located near the center of the dam, is an open reinforced concrete channel extending across the top of the dam. This channel is seven and one-half feet in width at the upstream end, four feet in width at the downstream end, and one foot in depth. It was built in 1935 to replace an old overflow which was in poor condition.

The dam backs up a large body of water which covers forty or more acres. To it was attached a sawmill which went out of existence years ago. This sawmill was located on the north or downstream side of the highway passing the dam. It was known as the Calkins sawmill and the pond as Calkins Pond. Over twenty years ago the dam and pond were raised about six feet and since then the pond is known as Lake Thompson.

PALMER TOWN FARM DAM.

On a tributary of Gates Brook from the west, at a point about two hundred and fifty feet south of the highway leading from Palmer Old Center to the town of Warren, Worcester County, where the drainage area is two-tenths of a square mile, is located a small ice pond dam belonging to the Palmer Town Farm.

It is an earthen structure sixty-seven feet in length, six feet in height and seven feet in width on top. The overflow is located about twenty-five feet from the west end, and consists of an open concrete channel, seven feet in width, extending across the top of the dam and down the slope to the bed of the Brook. The pond formed is of small capacity and covers less than a quarter of an acre.

HOLDEN DAMS

Upstream from the Town Farm dam, and at a point where the drainage area contributory is less than one-tenth of a square mile are two small dams owned by M. William Holden, 431 Main Street, Palmer, Mass.

These dams were built about seventeen years ago by the Thorndike Co. to form storage reservoirs for the water supply of the village of Thorndike. In 1926 the plant was purchased by the present owner and the reservoir formed by the dams are still being used as the source of water supply for the village.

The first or lower dam is an earthen embankment sixty feet in length and six feet in height, faced on the upstream side with a concrete wall eight inches in thickness. The overflow is in the form of a wooden sluiceway built into the surface of the embankment near its center. The area of the reservoir formed is only about one-tenth of an acre.

The second dam is located upstream about one hundred feet from the first and at the end of the pond formed by the latter. This upper dam is an earthen embankment seventy-five feet in length, eight feet in height above the streambed, and has a top width of eight feet. A wood sluice surface overflow, six feet in length and sixteen inches in depth, is constructed in the surface of the embankment. The combined storage of both reservoirs is less than a half a million of gallons.

CENTRAL MASSACHUSETTS ELECTRIC COMPANY DAM.

On the Quaboag River, described under Monson, at Blanchardville, so-called, where the drainage area contributory is one hundred and seventy-seven square miles, is a dam belonging to the Central Massachusetts Electric Company.

The dam is a log crib spillway structure sloped up and downstream and backed with earth. It is one hundred and nine feet in length between abutments and seventeen and a half feet in height. To its downstream toe is attached a horizontal apron built of planking fifteen feet in width. On the west bank of the river is located the canal and hydro-electric generating station attached to the dam.

HOLBROOK DAM NO. 2.

Mount Dumpling Brook rises about a half mile southwest of Palmer Old Center and flows southwesterly to the Quaboag River, into which it empties at the foot of Mount Dumpling. It is one and a half miles in length and has a total drainage area of one and one-third square miles. Upstream about three-quarters of a mile from its mouth, at a point where the drainage area contributory is three-quarters of a square mile, is located an ice pond dam belonging, now or formerly, to Arthur Holbrook, Palmer, Mass.

The dam is an old wooden structure of the post deck type, backed upstream with gravel. It is about one hundred and eighty feet in length, eight feet in height, and ten feet in width on top. The dam is now a derelict,

with a large breach in it for the free passage of the brook.

LABOSSIÈRE DAM.

Upstream about a quarter of a mile from the Holbrook dam, last described, at a point where the drainage area contributory is one-half a square mile, is an ice pond dam belonging to Hermas C. LaBossier, Palmer, Mass.

It is an earthen embankment two hundred and sixty-one feet in length, twelve feet or thereabouts in height, and eight feet wide on top. There are two spillways, one being a two foot pipe laid through the dam from a well containing stop planks, built in the pond at the upstream toe of the structure, and the other a surface spillway ten feet in length built at the west end of the dam. The latter overflow was constructed about ten years ago at the request of the County. The pond formed by the dam is about five acres in area.

KIRKSON PAPER COMPANY DAMS (FORMERLY WHITALL ASSOCIATES DAMS).

Graves Brook rises about one and a quarter miles southeast of Palmer Old Center and flows south through Tennyville, so-called, to the Quaboag River. It is one and a half miles in length and has a total drainage area of about one square mile.

There are two small dams on this brook that belong to the Kirkson Paper Company, Palmer, Mass. They are located near the factory buildings of the company in close proximity to each other. The drainage area of these dams is about three-quarters of a square mile. Both dams are low earthen embankments about a hundred feet in length and less than eight feet in height, provided with culvert pipe and surface swale overflows. The storage capacity, however, is so small that no material damage would result even from the failure of both dams at the same time. The pondage formed is used for process water and fire protection for the mill.

PALMER WATER WORKS DAMS.

There are two other dams on Graves Brook besides those last mentioned, which belong to the Palmer Fire District No. 1. and are known as the Intake and Storage reservoir dams. They are located in close proximity to each other, a short distance upstream from the Kirkson Paper Company dams, last described, at a point on the brook where the drainage area contributory is a half square mile. The surface area of the Intake Reservoir is one acre and that of the Storage Reservoir four acres.

The Intake dam is an earthen embankment one hundred and eighty-six feet in length, twelve feet in height and thirteen feet in width on top. The overflow is located at the west end and is nine and a half feet in length, with its crest three feet below the top of the embankment. From the crest extends a concrete channel, which connects with the bed of the stream below the toe of the dam.

About five hundred feet upstream from the Intake dam is the Storage Reservoir dam. It is also an earthen embankment two hundred and seventy feet in length, about eighteen feet in height and twenty feet in width on top, the upstream slope being paved with stone. The spillway is at its west end, ten feet in length, with its crest four feet below the top of the dam. It is built of concrete from which a concrete channel extends around the toe of the dam and discharges into the Intake Reservoir.

MAHONEY DAM.

Kings Brook rises on the south and east slopes of Pattaquattic Hill and flows south to the Quaboag River, into which it empties about one mile south of West Brimfield. Kings Brook is four miles in length and has a total drainage area of about four square miles.

About two and a half miles upstream from its mouth, at a point where the drainage area contributory is one and three-quarters square miles, are the traces of a dam on property belonging now or formerly to Dennis Mahoney, Palmer, Mass. Long ago there was attached to this dam a gristmill, of which only a few foundation stones now remain. Small portions of the abutments and a few stones across the bed of the brook are all that is left of the dam.

McNITT DAM.

On a small tributary which enters the Quaboag River from the North about one-quarter of a mile upstream from the Central Massachusetts Electric Company dam, is located a small pleasure pond dam owned by V. V. McNitt, of New York City. This dam is located about a thousand feet upstream from the mouth of the tributary, at a point where the drainage area contributory is one square mile. It is a concrete structure backed with earth, about seventy-five feet in length, and ten feet in height above the streambed, provided with a concrete overflow eight feet in length and one foot in depth, near its center.

The pond formed by the dam covers a surface area of less than one acre, and is used for pleasure purposes.

NATURAL PONDS

PATTAQUATTIC LAKE.

Pattaquattic Lake is situated about two miles north of Palmer Old Center, flows into the Ware River, has a surface area of about nineteen acres, and drainage area of one-half a square mile.

BROWN POND.

Brown Pond is located one and a quarter miles northwest of the village of Thorndike, flows into the Swift River, has a surface area of about thirteen acres and a drainage area of a quarter of a square mile.

LILY POND.

Lily Pond is located in Bondsville, drains into the Swift River, has a surface of about three or four acres and a drainage area of not more than one-tenth of a square mile. There are no dams across the outlets of these ponds.

R U S S E L L

Of the eight dams in Russell, three are on the Westfield River, two on Westfield Little River, one on Potash Brook, one on Pond Brook, and one on Black Brook.

The three on the Westfield River, namely the Strathmore Paper Company dam, the Westfield River Paper Company dam, and the Chapin & Gould Paper Company dam are described with the other dams on the Westfield River under the Westfield River Dams. Formerly Hazzard Pond (Morondake Lake) was a natural pond.

CITY OF SPRINGFIELD WATER WORKS INTAKE DAM.

The Westfield Little River is formed in the southeast corner of the town of Blandford by the union of Borden and Peeble Brooks in the Cobble Mountain Reservoir. It flows southeasterly through Russell and Westfield, forming a part of the boundary line between these two towns, and empties into the Westfield River, at a point about two and a half miles upstream from the Westfield-West Springfield boundary line. It is about eleven miles in length and has a total drainage area of eighty-four square miles.

In the southeast corner of the town of Russell, in the gorge of the Westfield Little River, at a point where the drainage area is forty-eight square miles, is located the City of Springfield Water Works Little River System Intake dam. This dam is a concrete masonry spillway structure curved in plan, which was built in 1909. It is one hundred and fifty-five feet in length and fifty feet in height, laid on a ledge foundation. The Intake Reservoir formed is about ten acres in area, and from it a tunnel about one mile in length, conveys the water to the West Parish Filter Plant.

CITY OF SPRINGFIELD WATER WORKS (COBBLE MOUNTAIN DAM).

About two miles upstream from the intake dam last described, and in the southwest corner of the town of Russell, where the drainage area contributory is about forty-six square miles, is located the Cobble Mountain Reservoir dam of the City of Springfield. The construction of this dam was begun in 1928, shortly after the plans were approved by the County, and the dam proper was completed in the early part of 1932.

This dam is an earthen structure built by the hydraulic and semi-hydraulic methods, on a solid ledge foundation. It is seven hundred and fifty feet in length on top and two hundred and forty-three feet in height above the riverbed. The top width of the dam, which carries the highway, is fifty feet. The average slopes are one on three upstream and one on three and one-third downstream, and the width of the base about fifteen hundred and ten feet. Both slopes are protected from erosion and wave action by heavy stone rip-rap. The upstream and downstream embankments are provided with heavy rockfill toes and in addition the downstream toe is reinforced by an arched concrete retaining wall thirty-five feet in height.

In the building of the structure practically all the material was hauled dry from the borrow pits to the dam site, and there mixed in a dissolving box with water, which transported it in pipes to the outside edges of the embankments. During construction the outer edges of the dam were kept higher than its center, in which a pool was maintained, so that part of the material was carried by the running water down the slopes, known as the beaches, toward the center of the dam. By this process the coarsest material remains at the outside while the rest is carried inward by the water, gradually sinking as it flows, the coarser first, the medium

next, and the finest last in the pool at the center. This last on precipitation forms the practically impervious core, while the coarser material forms the embankments which become more and more pervious toward their surfaces.

In the Cobble Mountain dam the core is about two hundred and thirty feet in thickness at its base and forty feet at its top. Two concrete cut-off walls countersunk into the foundation and projecting about three feet into the core material break the joint between the core and the ledge foundation. One of these walls extends across the streambed and up the natural slopes to within some eighteen feet of the top of the dam, while the other extends up the slopes to a height of only about thirty-five feet above the streambed.

No pipes or conduits of any kind pass through or are built into the dam, nor is there any overflow or spillway attached or adjacent to the dam. From the reservoir extend two tunnels, one on the north side of the stream known as the diversion tunnel, used for drawing down or emptying the reservoir, and the other on the south side known as the pressure tunnel, which conveys water to the hydro-electric plant located in the river gorge about one and one-half miles below the dam. The diversion tunnel is fifteen hundred and fifty feet in length. It is driven through the mountain from a point about twelve hundred feet upstream from the upstream toe of the dam, and discharges into the streambed well below the downstream toe. Gates etc., are installed therein for controlling the flow. The pressure tunnel is about seven thousand feet in length. Its head or portal is located almost a half mile from the dam and is one hundred and fifteen feet lower in elevation than the crest of the spillway.

The spillway of the reservoir is an open channel excavated in the solid rock ledge about one thousand feet from the south end of the dam. The first two hundred feet or thereabouts is lined with concrete while for the remaining length or about five hundred and fifty feet, the floor and side walls of the channel are formed by the solid ledge without any concrete lining. From the crest, which is one hundred and thirty-five feet in width, the channel gradually narrows down in a distance of about two hundred feet, to a width of fifty feet. From this point it continues fifty feet in width to the lower end, where it discharges into the streambed about one-half mile downstream from the toe of the dam. The crest of the spillway is twenty-eight feet lower than the top of the dam. A single span reinforced concrete highway bridge is built over the spillway channel a short distance below the crest, but it is of such height and design that in no way does it affect the discharging capacity of the spillway.

When the water level is even with the crest of the spillway, the reservoir formed covers a surface area of about ten hundred and thirty acres and has a capacity of, in round numbers, twenty billions of gallons. Although the dam is practically all in the town of Russell the reservoir lies almost entirely within the town of Blandford.

This dam, together with the Borden Brook and Intake dams, already described, the Sedimentation Reservoir at West Parish and the Provin Mountain distributing reservoir, all have been built by and belong to the City of Springfield Water Works, and are known as the Springfield Water Works Little River system, which is carefully looked after by the officers of the Springfield Water Works. It may be mentioned here that this Cobble Mountain Dam is the highest earthen dam in the world.

STRATHMORE PAPER COMPANY DAM (POTASH BROOK DAM).

On Potash Brook, (described under Blandford) about a half mile from its mouth, at a point where the drainage area is six and one-third square miles, is located a dam belonging to the Strathmore Paper Company, Woronoce, Mass.

The dam is a masonry spillway structure of heavy section, about eighty feet in length and twelve feet in height. It is adjacent to the highway leading from Woronoco to Blandford. The pond formed by the structure is small and covers not more than a third of an acre. It is used as a fire protection for the Strathmore Paper Company Mills below.

HAZZARD POND DAM.

This dam is located at the outlet of Hazzard Pond or Worondake Lake, which is controlled as a storage for the Strathmore Paper Company Mills. Hazzard pond is located about one and a half miles southwest of Woronoco, on Pond Brook, a tributary of Potash Brook. It covers about seventy acres and has a drainage area of one and a half square miles or thereabouts.

The dam is an earthen embankment one hundred and thirty-five feet in length and about eight feet in height. The spillway or overflow is located near the center of the structure and is built of heavy stone. It is twenty feet in length with its crest one foot below the top of the dam. There is a gate house located in the dam a short distance from the north end of the spillway. From the gate house extends a gated discharge pipe by which the flow from the pond is regulated. It seems that the pond is a natural body of water raised by the dam.

TOWN OF RUSSELL WATER WORKS DAM.

Black Brook rises in the northeast corner of Blandford, flows south-east into Russell, where it joins Freeland Brook near Russell Center. It is about three miles in length and has a total drainage area of four and a quarter square miles.

At a point about three-quarters of a mile northwest of Russell Center, where the drainage area contributory is three and three-quarters square miles, is a dam belonging to the town of Russell Water Works.

The dam is a concrete masonry spillway structure about one hundred feet in length and eighteen feet in height. The spillway section is forty feet in length. The dam is laid in a gorge, with its foundation on and its ends abutting rock ledge. The pond formed is small and not over one-half of an acre in area.

NATURAL PONDS

There are no natural ponds in Russell, although Hazzard pond (Worondake Lake) was a natural body of water before a dam was built across its outlet.

S O U T H W I C K

There are eleven dams and two natural ponds in Southwick. Of the dams, two are on Great Brook, five on tributaries of Great Brook, one at the Congamond Lakes, and three on Sodom Brook. The natural ponds are the Congamond Lakes, and Goose Pond.

CONGAMOND LAKES.

Although the Congamond Lakes have been raised in height above their natural state by a small dam across the outlet into Connecticut, they were previously natural bodies of water almost as large as they are at present, so that they will be considered here as natural ponds.

These Lakes are situated in the southeast part of Southwick, have a drainage area of about four square miles, and cover an area of five hundred and thirty acres.

CONGAMOND LAKES DAM.

At the extreme south end of the Congamond Lakes is a low earthen dam or dike, which has raised the lakes and prevented them from draining into Connecticut. It is an earthen structure about sixty feet in length and six feet in maximum height. The dam is ten feet in width on top and has no spillway or overflow.

It appears that considerable litigation over the drainage from these lakes occurred in the early seventies, between the States of Massachusetts and Connecticut, with the apparent result that the courts sanctioned the building of this dam in its present location. Although the town of Southwick was consulted and some of the oldest inhabitants interviewed, it could not be learned who is the owner of the structure, or who is responsible for its maintenance.

These lakes drain into Great Brook, a tributary of the Westfield River, and the outlet into the brook is controlled by a head gate structure.

In their natural state, that is before they were raised, it would seem that the overflow water from these lakes passed from the extreme south end of the lakes, at the site of the present dam or dike, into the State of Connecticut.

GOOSE POND.

Goose Pond is situated about a half mile west of the southerly end of the Congamond Lakes and drains into the State of Connecticut. Its drainage area is about three-quarters of a square mile. The pond proper covers only a few acres but it is surrounded by a swamp of considerable size.

FLETCHER DAM NO. 1.

Great Brook rises in the Congamond Lakes and flows north and northeast through Southwick and Westfield to the Westfield River, into which it empties about a mile upstream from the Westfield-Agawam boundary line. It is eight miles in length and has a total drainage area of twenty-five and one-third square miles.

At a point about three miles upstream from the Westfield-Southwick boundary line and three-quarters of a mile east of Southwick Center, where the drainage area contributory is twelve and three-quarters square miles, is a dam belonging to W. F. Fletcher, Southwick, Mass. This dam, known as the old powder mill dam, has long since been abandoned. It is now a derelict and forms no pondage.

FLETCHER DAM NO. 2.

About a half mile upstream from the Fletcher dam No. 1, last described, at a point where the drainage area contributory is twelve and one-third square miles, is a second dam belonging to W. F. Fletcher.

This is an earthen embankment one hundred and seventy feet in length and ten feet in height. Its spillway, seventy-three feet in length, is located in the structure toward the south end and is built of dry stone masonry backed with earth. Up until 1936, the dam furnished power to the flour and corn-mill attached, but in that year the dam was breached, and since then there has been no pondage formed.

BUZOKI DAM.

Kellogg Brook, a tributary of Great Brook, rises on the north slope of Round Hill at the Southwick-Westfield boundary line, flows southeast and northeast into Westfield, where it joins Great Brook at a point two thousand feet downstream from the Southwick-Westfield boundary line. It is one and a half miles in length and has a total drainage area of about one and a half square miles.

At a point about a mile upstream from its mouth, on property, now or formerly, belonging to Peter Buzoki, Southwick, Mass., where the drainage area contributory is three-quarters of a square mile, there was years ago a sawmill dam. Only traces of the structure now remain, so that it can be dismissed without further consideration.

ELY DAM.

About five hundred feet upstream and across the highway from the site of the Buzoki dam, at a point where the drainage area contributory is about half a square mile, is a small diversion dam built of earth, one hundred and twenty-five feet in length and not over four feet in height. The pondage formed is very small. At one time this dam diverted water through a canal to the old Kellogg tannery, which was located about five hundred feet downstream. This property, now or formerly, belonged to the estate of Henry W. Ely Esq., Westfield, Mass.

SMITH & HASTINGS DAM.

On a tributary of Great Brook from the south, at a point fifteen hundred feet from its mouth, where the drainage area is two and three-quarters square miles, are the remains of the old Smith & Hastings sawmill dam. Both dam and mill have been abandoned for years and now only traces of these structures exist.

GREGGER-FARANT DAM (FORMERLY CLARK DAM).

Upstream about two thousand feet from the Smith & Hastings dam, at a point where the drainage area contributory is about one square mile, is located a dam belonging to A. L. Greger and R. D. Farant, Longyard Street, Southwick, Mass.

This is an earthen embankment curved in plan, sixty feet in length and about seven feet in height. Its spillway is located in the center of the structure and is a wood flume seven and a half feet in length with its crest one foot below the top of the dam. The pond formed by the dam covers about two acres and is used as a fishing and pleasure pond.

FARNUM DAM.

Two miles southwest of Southwick Center, on a tributary of Great Brook, at a point where the drainage area is a little over one square mile, is an old sawmill dam which formerly belonged to B. W. Farnum. The dam and mill have been abandoned for years and only traces of both now remain.

PIESCZARKA DAM (FORMERLY LAMBSON DAM).

Sodom Brook rises near the top of Sodom Mountain at the Southwick-Granville boundary line, flows southeast and northeast to Munn Brook into which it empties at a point about a half mile upstream from the Southwick-Westfield boundary line. Sodom Brook is three miles in length and has a total drainage area contributory of three and a half square miles.

About three-quarters of a mile from its mouth, at a point where the drainage area contributory is about three square miles, is a dam belonging to John Piesczarka, Southwick, Mass. It is a concrete spillway structure of rather light section, forty feet in length and about seven feet in height, built in 1919. From its east end a canal runs a couple of hundred feet to the site of a sawmill and cider mill no longer in existence. The pond formed by the dam is used as a private ice pond and covers about three-quarters of an acre.

Previous to 1930 this dam belonged to Roy K. Lambson whose family maintained a dam at this place for more than half a century.

DEBONA DAM NO. 1.

Upstream about one and a quarter miles above the Piesczarka dam, last described, at a point where the drainage area contributory is about one-half a square mile, is a dam owned by Prospero DeBona, Stafford, Conn.

The dam is an earthen embankment four hundred feet or thereabouts in length, fourteen feet in height above the streambed, and containing a plank core. Its top width is ten feet, with slopes of one on three on the upstream side, and one on two on the downstream side.

The plans of this dam were approved by the County in 1930 and construction begun the same year. The structure was never fully completed, however, and, consequently, never accepted by the County. There is an opening through the dam for the free passage of the brook, so that no pondage is formed.

DEBONA DAM NO. 2. (FORMERLY BATTISTONI DAM).

About seven hundred feet upstream from the last described dam and having practically the same drainage area is a second dam owned by Prospero DeBona.

This dam is an earthen embankment faced on the downstream side with heavy stone masonry, eighty-four feet in length and sixteen feet in height. A surface overflow and channel eight feet in width, with its crest about two and a half feet below the top of the embankment, is located at the north end of the structure. The pond formed covers about three acres and is used as an ice and pleasure pond.

NATURAL PONDS

The natural ponds are Congamond Lakes and Goose Pond, already described above.

SPRINGFIELD

In Springfield there are twenty-two dams and ten natural ponds. Eleven of the dams are on Mill River and its tributaries, three on Pecowsic Brook in Forest Park, one on Van Horn Brook which belongs to the Springfield Park system, one on Lombard Brook, one on Dingle Brook, one on Abbe Brook, one on a tributary of Poor Brook, two on Bircham Bend Brook, and one on the Chicopee River. The later, namely, the Indian Orchard Company dam, is described under Chicopee River Dams.

The natural ponds are Long Pond, Five Mile Pond, Mona Lake, Loon Pond, Soland Pond, Venturers Pond, Bass Pond, Island Pond, Harmon Pond, and Dimmick Pond.

RICHARDS DAM.

Mill River is formed by the union of the north and south branches in the Water Shop Pond. The north branch rises in Nine Mile Pond, so-called, and flows southwesterly and northwesterly through the town of Wilbraham into and through Springfield to Water Shop Pond. The south branch rises on the western slope of Wigwam Hill in Wilbraham, flows southwesterly through Wilbraham to East Longmeadow, thence northwesterly and southwesterly through East Longmeadow and Springfield to Water Shop Pond, where it joins the north branch.

Mill River flows southwest from the pond one and a quarter miles to the Connecticut River, into which it empties at a point one and a quarter miles upstream from the Springfield-Longmeadow boundary line. Its total drainage area is thirty-four and a half square miles.

The Richards dam, now entirely gone out, was located about eight hundred feet from the mouth of Mill River, at a point where the drainage area contributory is practically the entire drainage area of the brook. It was a log crib spillway structure about sixty feet in length and six feet in height. The dam furnished power to a cotton waste mill and belonged to Fred J. Richards.

BEMIS & CALL HARDWARE COMPANY DAM.

Upstream about three hundred and fifty feet from the Richards dam, last described, at a point where the drainage area is practically thirty-four and one-half square miles, is a dam belonging to the Bemis & Call Hardware Company, South Main Street, Springfield, Mass.

It is a post deck spillway structure, forty feet in length between abutments and ten feet in height. The foundation is ledge. Along the toe of the dam is laid an apron in order to prevent erosion of the ledge foundation. The mill is in close proximity to the north end of the dam, from which is laid the penstock, to the wheels. Two iron penstocks were formerly laid from the south end of the dam but these have been removed for some time. The pond formed is small.

BAY STATE THREAD WORKS DAM.

About two hundred and fifty feet upstream from the Bemis & Call Hardware Co., dam, last described, at a point where the drainage area is thirty-four and one-third square miles, is located a dam belonging to the Bay State Thread Works, Springfield, Mass.

This is a concrete spillway structure sixty-five feet in length between abutments and eleven and a half feet in height. It is laid on rock ledge and was constructed in 1919. The pond formed is small.

BALDWIN-DUCKWORTH CHAIN MANUFACTURING COMPANY DAM.

Upstream about one hundred and fifty feet from the Bay State Thread Works dam, last described, where the drainage area is, also, thirty-four and one-third square miles, is a dam belonging to the Baldwin-Duckworth Chain Mfg. Corp., Springfield, Mass.

This is a wooden post deck structure open on the downstream side and backed with earth on the deck or upstream side. It is fifty feet in length and twelve feet in height. At each end are heavy stone masonry abutments, the south abutment containing the mill headgates.

Since the chain company moved to a new location a few years ago, the water power has not been used and, no repairs have been made on the dam, so that at present, it is practically a derelict and backs up but little water.

SPRINGFIELD WASTE COMPANY DAM.

About seven hundred feet upstream from Locust Street, at a point where the drainage area contributory is about thirty-four square miles, is a dam belonging to the Springfield Waste Company, Springfield, Mass.

This is a stone masonry spillway structure of the Ogee type, fifty feet in length and about twenty feet in height. At its north end is the bulkhead containing the gates of the penstock leading to the mill, which adjoins the bulkhead. The pond formed by the dam is small.

SPRINGFIELD WEBBING COMPANY DAM.

Upstream about one thousand feet from the Springfield Waste Company dam, at a point where the drainage area contributory is a little less than thirty-four square miles, is located a dam belonging to the Springfield Webbing Company 235 Mill Street, Springfield, Mass.

It is a stone masonry and concrete spillway structure built on a ledge foundation, the south half being concrete and north half stone masonry. The dam is seventy-five feet in length and twelve feet in height. In 1928 the crest was rebuilt of reinforced concrete.

U. S. ARMORY WATER SHOP DAM.

This dam belongs to the Federal Government and forms Water Shop Pond which has a surface area of three hundred and twenty-eight acres and a drainage area of thirty-three and a half square miles.

The dam is a spillway structure one hundred and six feet in length between abutments and twenty-seven feet in height to the crest of the spillway, or thirty feet in height to the top of the abutments. It is built of red sandstone, sloped on the upstream side and slightly battered, probably two feet from the perpendicular, on the downstream side. It is laid on ledge and along its toe the ledge is covered with a log apron to protect it from scour or erosion, that might, in time undermine the toe of the structure.

CITY OF SPRINGFIELD PARK SYSTEM DAM NO. 1.

At the point where Breckwood Boulevard crosses the north branch of Mill River is located a dam owned by the City of Springfield Park Department. At this place the stream flows under the highway in a rectangular concrete culvert about fourteen feet square in section.

The dam consists of a concrete wall about eight feet in height extending across the upstream end of the culvert. The dam, culvert and highway were built in 1932 as a part of the development of the district. The drainage area of the stream at this place is about thirteen square miles, and the pond formed covers about ten acres.

PRATT DAM (ANGLERS CLUB DAM).

On the north branch of Mill River about five hundred feet upstream from Parker Street, at a point where the drainage area contributory is ten and a half square miles, is a dam belonging to George D. Pratt, Springfield, Mass.

It is an earthen embankment one hundred and fifty feet or thereabouts in length and seven feet in height. The spillway is of concrete, thirty-six feet in width and with its crest five feet below the top of the dam. Small steel H beams three feet in height are set in the spillway crest for the installation of stop planks. When the stop planks are in place the pond formed covers an area of about four acres and has been used as a fishing pond.

CITY OF SPRINGFIELD PARK SYSTEM DAM NO. 2. (FORMERLY J. STEVENS ARMS CO. DAM).

This structure is on the south branch of Mill River at the outlet of Mill Pond, so-called, in Sixteen Acres, where the drainage area contributory is nine and a half square miles. It appears that this property was donated to the City of Springfield for park purposes a few years ago by the J. Stevens Arms Co., the previous owner.

The dam is a dry stone masonry spillway structure, fifty feet in length and twelve feet in height, laid on a ledge foundation.

The pond is thirty-five acres in area and, apparently, was a natural pond before the dam was constructed across its outlet. To the structure were attached a sawmill and a grist mill which were destroyed by fire about thirty years ago.

ANTONIO GAIMARI DAM.

This is an ice pond dam located east of State Street near St. Michael's Cemetery on a small tributary of Mill River from the north, at a point where the drainage area is a half a square mile. It, now or formerly, belongs to Antonio Gaimari, 11 William Street, Springfield, Mass., and forms a pond of about two acres.

The dam is an earthen embankment one hundred and sixty-five feet in

length, twelve feet in height and from twenty to twenty-five feet wide on top. The overflow is a well located in the pond, from which a brick culvert extends through the dam to a point below its toe. The cutting of ice on this pond has been discontinued, the pond drawn down and the ice house attached has been razed.

CITY OF SPRINGFIELD PARK SYSTEM DAMS (FOREST PARK DAMS).

Three of the dams of the Springfield Park System are located on Pecowsic Brook (described under Longmeadow) in Forest Park.

The first of these dams is located about two thousand feet upstream from the mouth of the brook, at a point where the drainage area contributory is about six and one-third square miles. It is an earthen embankment about fifteen feet in height, eighty feet in length and ten feet in width on top. The spillway is located in the middle of the structure and is about thirty feet in length, with its crest four feet below the top of the embankment. An inclined overflow channel with floor of concrete, and walls of cobblestones laid in mortar, extends from the crest down the slope to a large pool at the toe of the dam. The pond formed by the structure is about two acres in area.

The second dam in Forest Park is located about five hundred feet upstream from the dam last described, at a point where the drainage area is a little less than six and one-third square miles. This dam is an earthen embankment which carries a macadam roadway on its top. It is about three hundred and forty feet in length, nine feet in height, and fifty-four feet in width on top, containing a concrete core wall. The overflow is located near the middle of the dam, and consists of a heavy stone masonry wall, built in the form of a semi-circle of twenty-foot radius, with its crest about three feet below the top of the dam. From the overflow, three concrete culverts, each four by four and one-half feet in section, pass through the embankment to the downstream toe. The pond formed by this dam, which was built in 1922-23, covers an area of about three acres and is known as Fountain Lake.

The third dam on Pecowsic Brook in Forest Park is known as the Porter Lake Dam. This dam was built in 1919-20 and is located about eight hundred feet upstream from the Fountain Lake dam, last described, where the drainage area contributory is about six and one-quarter square miles. It is an earthen embankment about four hundred and fifty feet in length, twenty feet in height, and thirty-seven feet in width on its top, which carries a macadam park roadway. The overflow is a heavy stone wall, built in the form of a semi-circle of thirty-foot radius, with its crest about seven feet below the top of the dam. From the overflow an arched brick and concrete culvert, ten feet in width and nine feet in height, extends through the embankment. The pond formed by this dam is a rather large body of water known as Porter Lake.

CITY OF SPRINGFIELD PARK SYSTEM DAM. (VAN HORN POND DAM).

Van Horn Brook is a small tributary of the Connecticut River, which rises in the northerly part of Springfield and flows southwesterly a distance of about one and one-half miles to the river. The total drainage area of the brook is about three-quarters of a square mile.

On the headwaters of the brook, in Van Horn Park, where the drainage area contributory is about four-tenths of a square mile, is located a dam owned by the

city of Springfield Park Department. This dam forms Van Horn Pond which was, up until 1909, one of the sources of the Springfield water supply. The pond, when filled, covered an area of about sixteen acres and had a capacity of about one hundred million gallons. In recent years, however, the water level has been lowered to a level of some fifteen feet below the top of the dam, and the pondage formed is much less than formerly.

The dam is an earthen embankment about eight hundred feet in length, thirty-eight feet in height and seventeen feet in width on top, with slopes of one on two and one-half upstream and one on two downstream.

Through the embankment a twelve inch iron drain and overflow pipe extends from a stone masonry gate well located in the pond at the upstream toe of the dam. There is no surface overflow or spillway attached to the structure now.

CITY OF SPRINGFIELD WATER WORKS DAM. (LOMBARD RES. DAM).

The Lombard Reservoir dam is located at the south end of Kendall Street near the Boston and Albany Railroad and has a drainage area contributory of about a quarter of a square mile.

The dam is one hundred and ninety feet in length and twenty feet in height. The reservoir which it formed covered about one and a half acres and was at one time part of the water supply of the City of Springfield. This supply was discontinued long ago and there has been no reservoir for years. The reservoir basin is being filled in as a dumping ground.

HOGAN DAM NO. 1.

On Dingle Brook, which is described under Chicopee relative to the Chicopee Electric Lighting Station dam, at a point about a mile upstream from its mouth or four hundred feet south of Liberty Street, where the drainage area contributory is a third of a square mile, is located an ice pond dam belonging to Peter F. Hogan, Woodmont Street, Springfield, Mass.

It is an earthen embankment one hundred and twenty-five feet in length and ten feet in height. It is fourteen feet in width on top and carries a driveway. The overflow is located in the dam, about twenty feet from its south end and is a ten inch vertical pipe connected with a twelve inch pipe, laid horizontally through the structure. There is, also, a surface overflow or swale at the east end of the dam. The pond formed by the dam covers about an acre.

HOGAN DAM NO. 2. (FORMERLY CHICOPEE WATER WORKS DAM).

Abbe Brook is a tributary from the east of Dingle Brook, into which it empties about two hundred feet downstream from the dam last described. On this brook about eight hundred feet upstream from its mouth, at a point where the drainage area contributory is three-quarters of a square mile, is a second ice pond dam belonging to Peter F. Hogan. This dam formerly belonged to the City of Chicopee (Water Works Dept.) and formed what was known as the Abbe Reservoir, which covers about three and a half acres and, which was discontinued years ago, as a water supply for the City of Chicopee.

The dam is an earthen embankment two hundred and ten feet in length, thirteen feet in height, and twelve feet in width on top. There is a brick gate house located in the pond at the upstream toe of the dam, from which is laid through the dam a circular brick waste conduit two feet in diameter. The height of the pond is regulated by stop planks in the gatehouse. In 1929 on the advice of the County a surface overflow was added to the structure at its north end.

STORMS DROP FORGING COMPANY DAM.

In East Springfield on a small tributary of Poor Brook (described under Chicopee) is a small dam belonging to the Storms Drop Forging Co., Cottage Ave., Springfield, Mass. It is located near the shops of the company and has a very small drainage area contributory. The dam is a concrete wall eight inches in thickness faced and backed with earth fill. The overflow, located near the center of the dam, is five feet in length and flanked with concrete wing walls. The structure is fifty-four feet in length and seven feet in height. It forms a small pond used for pleasure purposes and for furnishing water to the company's shops.

FITZGERALD DAM NO. 1.

There are two dams on Bircham Bend Brook, a tributary of Chicopee River, into which it empties from the South at Bircham Bend. The first dam is located about a quarter of a mile upstream from the mouth of the brook, where the drainage area contributory is about three-quarters of a square mile, and belongs to Edward Fitzgerald, Indian Orchard, Mass.

This structure is an earthen embankment three hundred feet in length, thirteen feet in height and nine feet in width on top. The overflow, which is one hundred and twenty-five feet from the south end of the structure, is twelve feet in length, with its crest five feet below the top of the dam.

The structure has been built over fifteen years, and forms a pond of about four acres in area, which is leased to the Bircham Fly Club for fishing purposes.

FITZGERALD DAM NO. 2.

About a half mile upstream and across the railroad from the Fitzgerald dam No. 1, last described, at a point where the drainage area contributory is one half a square mile, is another dam belonging to Edward Fitzgerald. This structure is an earthen embankment one hundred and sixty feet in length, thirteen feet in height and fourteen feet in width on top. The overflow is located at the south end and is built of concrete. It is ten feet in length, with its crest four feet below the top of the dam.

The pond formed is about six acres in area and is used as a fishing pond.

NATURAL PONDS

LONG POND.

This is located near the north end of Berkshire Avenue, has a surface area of fifteen acres and a drainage area of not over a quarter of a square mile. It has no visible outlet.

DIMMICK POND.

This is located on the east side of Parker Street, just north of the Boston and Albany Railroad. It has a surface area of about six acres, a drainage area of not over one-quarter of a square mile, and no visible outlet.

FIVE MILE POND.

This body of water is located on the north side of the Boston Road between Brandon Avenue and Pine Grove Street. It has a surface area of ninety-six acres and a drainage area of about a half square mile. It has no visible outlet.

MONA LAKE.

This is located east of Berkshire Avenue just north of the Boston and Albany Railroad. It has a surface area of twenty-six acres, a drainage area of little more than a quarter of a square mile and no visible outlet.

LOON POND.

This is situated on the north side of Boston Road between Pasco Road and Parker Street. It has a surface area of eighteen acres, a drainage area of less than a half square mile and drains into the north branch of Mill River.

SOLAND POND.

Soland Pond is situated on the west side of the Boston Road between Harding and Hodson Streets. It has a surface area of two or three acres, a drainage area of not more than a quarter of a square mile and drains into Poor Brook, a tributary of the Chicopee River.

VENTURERS POND.

This is located near the corner of Wilbraham and Plum Tree Roads. It has a surface area of five or six acres, a drainage area of about a half square mile and no visible outlet.

BASS POND.

This is located on the west side of Parker Street about a half mile north of Sixteen Acre Road. It has a surface area of twenty-two acres, a drainage area of about a quarter square mile, and no visible outlet.

ISLAND POND.

This is located south of the Water Shop Pond, adjacent to the Island Pond Road. It has a surface area of nine or ten acres, a drainage area of not more than a quarter of a square mile, and no visible outlet.

HARMON POND.

This is located on the south side of Plum Tree Road about a quarter of a mile east from its junction with Allen Street. It has a surface area of five acres and a drainage area of about an eighth of a square mile. There is no visible outlet from it.

TOLLAND

There are eleven dams and two natural ponds in the town of Tolland. Of the dams, one is on the west branch of the Farmington River, one on Snow Brook, one on Twining Brook, one on Trout Brook, two on Larkin Brook, one on Taylors Brook, two on Hubbard River, and two on Pond Brook. The two natural ponds are Hall Pond and Cranberry Pond.

STARKS DAM (FORMERLY VERCHOT ESTATE DAM).

The Farmington River rises in the town of Becket and pursues a southerly course through Otis, Tolland and Sandisfield to the Massachusetts-Connecticut boundary line, thence, across Connecticut to Windsor, at which point it empties into the Connecticut River. Its total length is seventy-five miles and total drainage area about six hundred square miles. In Massachusetts, its length from its source to the Connecticut line is seventeen miles, and its drainage area one hundred and three square miles.

About five hundred feet upstream from the Massachusetts-Connecticut line, at a point where the drainage area contributory is one hundred and three square miles, is a dam belonging to William A. Starks, Coldbrook River, Connecticut. This is only a diversion dam built of boulders and cobblestone in riprap fashion. It is one hundred and fifty feet in length, not over three feet in height, and was used for diverting water into a canal five hundred feet in length which leads to a cider and sawmill below. Inasmuch as the structure forms no pondage to speak of, no damage caused by released water would result from failure of the structure.

WARD DAM (FORMERLY GARIGUE DAM).

Snow Brook is a small tributary of the Farmington River from the west, into which it empties about two and a quarter miles downstream from the Tolland-Otis boundary line. About a half mile from its mouth and three miles northwest of Tolland center, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging to Dr. R. P. Ward of Winsted, Connecticut, and formerly to W. A. Garigue, Plainfield, New Jersey.

It is an earthen embankment faced downstream with dry stone masonry, two hundred and sixty-five feet in length, nine feet in height, and ten feet in width on its top. For some years this dam had been a derelict with a free waterway through it, but in 1934 it was overhauled, a new overflow was constructed, and the dam is again in service. The overflow is located in the center of the dam and consists of three plank sluiceways or flumes, having a total width of about nineteen feet, which extend through the embankment. The section of the dam directly under the sluiceways, is built of stone masonry to a height of about six feet above the stream bed. The center sluiceway is fitted with stop planks and extends down to the bottom of the dam, while the two outer sluiceways are surface overflows, with their crests two and one-half feet below the top of the dam.

The pond formed by the dam covers about six acres and at one time supplied water to a sawmill. Only traces of the mill are left, and the pond is now used for pleasure purposes.

ZAVATKAY DAM (FORMERLY DEEMING DAM NO. 1.)

Twining Brook rises on the west slope of Noyes Hill and flows southwest through Tolland into Sandisfield, where it joins the west branch of the Farmington River about a mile downstream from New Boston. It is two and a half miles in length and has a total drainage area of two square miles. Upstream about one and three-quarters miles from its mouth, at a point where the drainage area contributory is about one square mile, is a dam belonging to F. F. Zavatkay, 19 Rockwell Street, Winsted, Connecticut.

It is an earthen embankment faced downstream with dry stone masonry, one hundred and ten feet in length and nine feet in height. Its spillway or overflow is a sluice-way located at its west end and is six feet in height. The pond formed by the structure is about ten acres in area. It is known as Twining Pond, and was used some years ago as a storage from which water was drawn through a canal, nearly a mile in length, to a sawmill located along the highway leading to New Boston. It appears the sawmill, which was being run intermittently until five or six years ago, is now shut down for good.

DEEMING DAM.

Trout Brook is a tributary of Twining Brook, into which it empties from the east a few hundred feet east of the highway leading to New Boston. At a point on this tributary about a half mile upstream from its mouth, where the drainage area is one-tenth of a square mile, is a dam belonging to Mrs. F. B. Deeming, P. O. address, New Boston, Mass.

The structure is a gravel embankment faced up and downstream with dry stone masonry. It is one hundred feet in length, nine feet in height, and ten feet wide on its top. The overflow is at one end of the dam and built of wood. The pond formed by the dam is known as Trout Pond and is about two acres in area.

PALMENBERG DAM NO. 1. (TOLLAND FISH AND GAME CLUB DAM).

Larkin Brook rises in the northeast corner of Colebrook, Connecticut, flows northwesterly into and through Tolland to Slocum Brook, into which it empties near the junction of Slocum, Taylors and Cranberry Brooks. It is about one and a quarter miles in length and has a total drainage area of one-half a square mile.

At a point two hundred feet upstream from its mouth, where the drainage area contributory is practically the total drainage area of the stream, is a dam belonging to T. C. Palmenberg, 63 West 36th Street, New York, N. Y. It is an earthen embankment faced downstream with stone, eighty feet in length and nine feet in height. The structure is now a derelict with a free water way through it.

PALMENBERG DAM NO. 2.

The second dam on Larkin Brook in Tolland is about fifteen hundred feet upstream from the Palmenberg dam No. 1, last described, at a point where the drainage area contributory is somewhat less than a half square mile and belongs, also, to T. C. Palmenberg.

It is an earthen embankment two hundred and thirty-four feet in length, eight feet in height, and eleven feet wide on top. The spillway is of concrete, five and a half feet in length, located seventy-five feet from the south end of

the dam. Originally the top of the dam was only six inches above the crest of the spillway, but a few years ago on the advice of the County, the dam was raised to provide a freeboard of two feet. The pond formed by the structure covers about ten acres and is used as a fishing pond.

CLARK DAM.

Taylor's Brook rises one mile northwest of Tolland Center and flows south a distance of three miles to its junction with Cranberry Brook, both brooks forming Slocum Brook. Taylor's Brook has a total drainage area of about four square miles.

Upstream three-quarters of a mile from its mouth, at a point where the drainage area contributory is three and a half square miles, was located a sawmill dam on property now or formerly belonging to George Clark, Colebrook, Connecticut. The sawmill was a going concern in the seventies although at present only traces of it and the dam remain.

COOLEY DAM.

On Hubbard River (described under Granville) at a point near the Tolland-Granville boundary line, where the drainage area contributory is nine and a half square miles, are the remains of a dam belonging now or formerly to William Cooley, Granville, Mass.

It was a spillway log diversion dam one hundred and thirty feet in length and seven feet in height, which turned water into a canal leading to the sawmill located about fifteen hundred feet downstream, at a point near the highway. The sawmill was shut down for good years ago and only traces of the dam now remain.

TUNXIS H. F. O. CLUB DAM NO. 1.

A little less than a mile upstream from the Cooley dam, last described, at a point where the drainage area contributory is about six and a half square miles, are the remains of a dam belonging to the Tunxis Hunting, Fishing and Outing Club, Tolland, Mass. This dam was maintained until about fifteen years ago when the club removed its central part with dynamite in order to make a free water way through it.

TUNXIS H. F. O. CLUB DAM NO. 2.

Pond Brook rises in Noyes Pond, which is situated about two miles northwest of Tolland Center. The brook flows easterly to Hubbard River. It is about one and one-half miles in length and has a total drainage area of three and one-half square miles.

Upstream about three-quarters of a mile from its mouth, at a point where the drainage area contributory is roughly three and one-quarter square miles, is a second dam belonging to the Tunxis Club. This structure is built of field stone masonry faced on the upstream side with gravel supported by a double line of perpendicular planking. It is one hundred and seventy feet in length, eight feet in height, and twelve feet in width on top. The spillway or overflow is located

twenty-six feet from its south end and is twenty-one feet in length. This spillway is lined with wood and its crest is twenty inches below the top of the dam. A second overflow four feet in length located near the center of the dam is provided with stop planks for regulating the height of the pond. The pond formed is a shallow body of water covering about thirty acres, which is used for fishing purposes. In 1937 a new surface overflow ditch or channel was excavated in the natural ground south of the dam.

TUNNIS H. F. O. CLUB DAM NO. 3.

Noyes Pond as stated above is situated about two miles northwest of Tolland Center. It is a natural body of water raised by a dam built across its outlet. The drainage area contributory to the pond is about one and a half square miles and the area of the pond one hundred and eighty acres.

The dam across the outlet is built of dry stone masonry capped with concrete and earth. It is two hundred feet in length and seven feet in height. The spillway or overflow is eighteen inches in length and is located at the north end of the structure. A second spillway three feet in length is located near the center of the dam. In this spillway movable planks are provided for regulating the height of the pond. Formerly the pond was used as a storage and feeder to the small sawmill pond located downstream. The latter pond and the sawmill went out of existence years ago.

NATURAL PONDS

HALL POND.

Hall Pond is situated about two miles northeast of Tolland Center on the headwaters of Hubbard River into which it drains. This is a natural pond which covers about thirty-three acres and has a drainage area contributory of a half square mile.

CRANBERRY POND.

Cranberry Pond is located about one and a half miles southeast of Tolland Center on the headwaters of Cranberry Pond Brook, covers seventeen acres and has a drainage area contributory of a little over a half square mile. There is no dam at its outlet.

Noyes Pond, above described, was a natural body of water before being raised by a dam across its outlet.

W A L E S

In the town of Wales there are fourteen dams, eight of which are on Wales Brook, two on tributaries of Wales Brook, two on Conant Brook, and two on Hollow Brook. There are no natural ponds in Wales now although it appears that Wales and Vineca Ponds were originally natural bodies of water.

THOMPSON DAM.

Wales Brook rises in the town of Wales about a mile southeast of Wales Pond, flows northwest and north into and through Brimfield, where it joins Mill Brook at a point about three-quarters of a mile southeast of Brimfield Center. It is five and a half miles in length and has a total drainage area of six and a half square miles.

About a half mile upstream from the Wales-Brimfield boundary line, or about one and a half miles northeast of Wales Center, at a point where the drainage area contributory is four and a half square miles, was a dam on property, now or formerly, belonging to Leon H. Thompson, Wales, Mass. It was an old sawmill structure built of earth and abandoned years ago. In its present disintegrated condition it forms no pond, nor does it offer any obstruction to the natural flow of the stream.

H. P. MARCY & COMPANY DAM.

About a half mile upstream from the Thompson dam, at a point where the drainage area contributory is three and a half square miles, is a dam belonging, now or formerly, to H. P. Marcy & Company, Wales, Mass. This structure was a small stone diversion dam built across the brook just north of the Wales-Holland highway. It turned water into a canal leading to an 'up and down' sawmill which was located on the east side of the brook a short distance downstream. Mill and dam were abandoned years ago, and the whole central part of the dam is gone out so that no obstruction is offered to the natural flow of the stream.

WALES WOOLEN MILL DAM.

Upstream two thousand feet from the last described dam, at a point where the drainage area contributory is three square miles, is a dam belonging to the Wales Woolen Company, or Raphael Sagalyn, 1321 Main Street, Springfield, Mass.

This is a concrete structure fifty feet in length and twelve feet in height. The spillway is in the middle of the structure and is ten feet in length, with its crest three feet below the top of the dam. From the end of the structure there extends upstream, for a distance of sixty feet or thereabouts along the highway, an earthen embankment or dike. The pond formed by the dam is very small. From it is laid a canal that conveys the pond water to the mill below. This water is not used for developing power but for fire protection and process purposes, being first pumped into an artificial reservoir built on the higher ground adjacent to the mill.

MAPLE VALLEY WOOLEN MILL DAM.

Upstream seven hundred feet above the Wales Woolen Mill dam, last described, at a point in the brook where the drainage area contributory is two and three-quarters square miles, is a dam belonging, now or formerly, to A. & E. D. Shaw, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth, one hundred feet in length and fourteen feet in height. Part of the structure has gone out making a free water way through it.

DELL MANUFACTURING COMPANY DAM.

On the brook about one thousand feet upstream from the Maple Valley Woolen Mill dam, last described, at a point where the drainage area contributory is a little less than two and three-quarters square miles, is located a dam belonging, now or formerly, to the Dell Manufacturing Company, Wales, Mass.

It is a dry stone masonry spillway structure backed with earth. It is fifty feet in length, eight feet in height, and carries a driveway on its top. The dam was used as a diversion dam from which a canal was laid about seven hundred feet in length to the woolen mill down stream. The mill was destroyed by fire years ago and never rebuilt. Likewise, the dam has been abandoned and a derelict, forming no pondage, for years.

SHAW MANUFACTURING COMPANY DAM.

About five hundred feet upstream from the Dell Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a half square miles, is a dam belonging, now or formerly, to the Shaw Manufacturing Company, Wales, Mass. It is about one hundred feet in length, fifteen feet in height and carries the highway on its top. At the southeast end of the structure is located the spillway, which is built on the downstream side of the highway. It is sixteen feet in length, with its crest six feet below the top of the dam and is arranged so that flashboards, up to four feet in height, may be installed.

The highway is carried over the channel or approach to the spillway by a wooden bridge. The pond formed by the structure is about five acres in area, from which a pipe or penstock is laid across the highway and downstream to the woolen mill below, which is no longer a going concern.

NEEDHAM DAM.

On Wales Brook in Wales Center, about two thousand feet upstream from the Shaw Manufacturing Company dam, last described, at a point where the drainage area contributory is two and a quarter square miles, is located a dam belonging, now or formerly to Ernest L. Needham, Wales, Mass. It is an earthen structure faced downstream with dry stone masonry. Its length is sixty feet and its height seven feet, with its spillway in the center of the structure. The spillway is thirteen feet in length and planked upstream. There is a sluice-way on the south end of the overflow two and a half feet wide and four and a half feet deep.

From the small pond formed by the structure a canal is laid across the highway and connects with the mill downstream. This mill, until about sixty years ago, was a woolen mill, and since then a sawmill, which, in recent years is operated

only intermittently. It is the oldest mill in the town, and the building, as it stands today, was constructed in 1828. The dam, also, is over one hundred years old.

WALES POND DAM.

The eighth and last dam on Wales Brook from its mouth is across the outlet of Wales Pond. It appears to be under the supervision of the State or Town authorities, as it forms the foundation or embankment on which the state highway is built. In the pond adjacent to the dam or embankment a spillway and gatehouse are constructed from which a discharge culvert is laid through the highway. In the gatehouse there are stop planks and apparatus for regulating the height of the pond, except in times of high water, when the pond discharges directly over the spillway into the culvert laid under the highway. The pond covers about seventy-seven acres, and has a drainage area contributory of one and a half square miles. It is a natural body of water raised by the dam.

MAYNARD DAM.

On the westerly side of the Haynes Hill Road, so-called, about three-quarters of a mile north of Wales Center, is located an ice pond dam owned by Dennis S. Maynard, Haynes Hill Road, Wales, Mass.

The dam is located on a small tributary of Wales Brook and has a drainage area of less than a quarter of a square mile. It is an earthen embankment one hundred and thirty feet in length, four feet in height and about seven feet in width on top. The overflow is a thirty-six inch diameter steel pipe, extending through the embankment, with a twelve inch concrete facing wall at its upstream end.

The pond formed is a very small and shallow one, which covers less than a quarter of an acre.

DUNHAM DAM (FORMERLY SQUIRE DAM).

This structure is located about a half mile from Wales Center on the road to Monson across a small tributary of Wales Brook from the west, at a point where the drainage area contributory is less than one-tenth of a square mile, and belongs to Harry Dunham, Wales, Mass.

The length of the structure, which is also the highway, is about one hundred and seventy feet and its height six feet. The pond formed covers about three or four acres, or probably, with the swamp land around it, six acres, and is used as a fishing pond. The spillway is a well with stop planks arranged therein, over which the water flows into the well and thence through a thirty inch diameter iron culvert laid under the highway.

NORCROSS DAM (FORMERLY PECK DAM).

At a point on Conant Brook (described under Monson), about a half mile upstream from the Wales-Monson boundary line, or three miles southwest of Wales Center, where the drainage area contributory is two square miles, is a dam

now or formerly belonging to Arthur Norcross Jr., 244 Madison Ave., New York, N. Y.

This is an earthen embankment faced downstream with dry stone masonry. It is one hundred and sixty-five feet in length, twelve feet in height, and seven feet wide on top. The overflow is twelve feet in length, with its crest one foot below the top of the dam. The pond formed by the structure is about three acres in area and the water power developed operated, some years ago, a shingle mill and afterwards a cidermill. For the past fifteen years, however, the cidermill has not been operated and is now closed for good.

Until bought by the present owner, this water privilege had been in the Peck family for over a hundred years and the homestead attached is more than two hundred years old. Since the mill ceased operating, the dam has been abandoned and is slowly going out by attrition, with no pondage being formed.

BRADLEY DAM.

Upstream about one and a half miles from the Norcross dam, last described, at a point where the drainage area contributory is three-quarters of a square mile, is a dam belonging, now or formerly, to Everett E. Bradley, Wales, Mass. It is located at the outlet of Vineca Pond, so-called, which is apparently a natural pond raised by the dam. The dam is an earthen embankment about one hundred and fifty feet in length and five feet in height, faced with dry rubble-stone. Because of a breach in the structure, the pond has been lowered to its natural level, and the dam does not interfere with the flow of the brook.

MASS. DEPARTMENT OF CONSERVATION DAMS (FORMERLY PALMER NATIONAL BANK DAMS).

There are two dams on Hollow Brook both of which belong to the State of Massachusetts, Department of Conservation. Hollow Brook rises in the town of Wales about one mile southwest of Wales Center, flows northerly through Wales and Brimfield to Charles Brook, which it joins to form Mill Brook at a point about a mile southwest of Brimfield. Hollow Brook is four miles in length and has a total drainage area of three and a half square miles. The two dams above mentioned are located in close proximity to each other, at a point about a mile northeast of Wales Center, and fifteen hundred feet upstream from the Wales-Brimfield boundary line, where the drainage area contributory is one and a quarter square miles. They were built some years ago to form fishing ponds.

The lower dam is a wooden structure built of logs and planking, one hundred and sixty feet in length and about six feet in height. The dam is apparently abandoned, and the water passes through it without forming any pond.

The other dam, three hundred feet upstream, is an earthen embankment one hundred and thirty feet in length, seven and a half feet in height, and carries a driveway on its top. The overflow is built of cobblestones with a six inch by six inch wood beam laid thereon to form the crest. This dam is also abandoned and the water flows unobstructed through a breach in the center.

NATURAL PONDS

Wales pond was formerly a natural pond until raised by the Wales pond dam already described.

Vineca Pond was likewise a natural body of water until it was raised by a dam built across its outlet. There are now no natural ponds in Wales.

WESTFIELD

There are twenty-four dams and three natural ponds in Westfield. Of the dams, one is on the Westfield River, namely the Turners Falls Power and Electric Company dam, and is described under Westfield River Dams, four are on Westfield Little River, one on Ashley Brook, one on Mann Brook, two on small tributaries of the Westfield Little River, three on Great Brook, four on Pond Brook, three on Powder Mill Brook, two on a tributary of Powder Mill Brook, one on Moose Meadow Brook, one at the West Parish filter plant, and one on Provin Mountain, the latter being the Provin Mountain Covered Reservoir.

FOSTER MACHINE COMPANY DAM.

On Westfield Little River (described under Russell), at a point about two miles upstream from its mouth where the drainage area is eighty-two square miles, is located the Foster Machine Company dam.

This is a timber crib dam backed with gravel. It is two hundred and ninety-seven feet in length between abutments, slightly less than six feet in height above the mud sill, and is aproned downstream. From the concrete bulkhead at the north end of the dam a canal extends to the Foster Machine Company shops about one thousand feet downstream. Because of the low height of the structure the volume of the pondage formed is not large, and in case of failure of the structure, it does not appear that any material damage would be done by the released water.

STEVENS PAPER MILLS INC. DAM NO. 1. (FORMERLY CRANE & CO. INC. DAM).

Upstream about three thousand feet from the Foster Machine Company dam, last described, is located the second dam on the Westfield Little River, at a point where the drainage area contributory is eighty-one square miles. It belongs to the Stevens Paper Mills, Inc., Westfield, Mass.

This is a spillway structure, the greater part of which is stone masonry, although a short length at the south end is concrete. The dam is laid on a ledge foundation. It is two hundred feet in length and twenty feet in height, with the crest of the spillway nine and a half feet below the top of the abutments. An earthen embankment or dike extends from the north abutment for a distance of two hundred and eighty feet. At the end of this embankment is located the penstock laid to the mill, built along the foot of the embankment.

The pond formed by the dam covers thirty-six acres.

STEVENS PAPER MILL INC. DAM NO. 2.

Upstream about a mile from the dam last described, at a point where the drainage area contributory is seventy-eight square miles, is the third dam on the Westfield Little River. This dam also is owned by the Stevens Paper Mills Inc., Westfield, Mass., but formerly belonged to Crane Brothers.

The dam is a stone masonry spillway structure, built of hard red sandstone on a ledge foundation. It is one hundred and fifty feet in length and fourteen feet in height, with its spillway six and a half feet below the top of the abutments. The dam was built in 1901 to replace a log dam. The pond formed

is long and narrow as the structure backs water a considerable distance upstream. Its area is not known and rather large to estimate.

WESTFIELD GREEN MARBLE WORKS COMPANY DAM.

This structure was located on the Westfield Little River at a point about fifteen hundred feet downstream from the Westfield-Russell boundary line, where the drainage area contributory is fifty-two square miles. Inasmuch as the greater part of the structure has gone out, it need not be further considered. The marble works plant still exists but has not been in operation for years.

MOSHER DAM.

A little over a half mile downstream from the site of the Westfield Green Marble Works dam, Westfield Little River is joined by a small tributary from the west. About one-third of a mile from the mouth of this tributary, and on the west side of the highway leading northerly from West Parish, so-called, where the drainage area contributory is not over a quarter of a square mile, is a small ice pond dam belonging to Bundage Mosher, R.F.D., Woronoco, Mass.

The dam is an earthen structure one hundred and ten feet in length and six feet in height, faced upstream with cobblestones laid in cement mortar. The overflow, or spillway, five feet in length is built of wood, and located over the streambed near the north end of the dam. The pond formed runs back only about one hundred feet and has an average width of not more than fifty feet.

FULLER DAM NO. 1.

Ashley Brook is a tributary of the Westfield Little River, into which it empties from the south, at the upstream end of the pond formed by the Stevens Paper Mill Dam No. 1.

About a mile upstream from its mouth, at a point where the drainage area contributory is less than a quarter of a square mile, is a dam belonging to Louis Fuller, Westfield, Mass. It was built to form an ice pond. The structure failed some twenty years ago, and at present it forms no pond nor obstructs the natural flow of the brook.

OSDEN DAM. SO-CALLED.

Munn Brook is formed in the town of Granville at the foot of Sodom Mountain by the union of Dickinson and Tillotson Brooks. It flows southeast and northeast through the towns of Granville and Southwick, and empties into the Westfield Little River about a half mile upstream from the upper Stevens Paper Mill dam. It is four and a half miles in length and has a total drainage area of twenty-one and a half square miles.

Upstream about fifteen hundred feet from its mouth, at a point where the drainage area contributory is practically the total drainage area of the brook, that is, twenty-one and a half square miles, the Osden dam was located. Inasmuch as only traces of this structure now remain, it need not be further described.

GILLETTE DAM.

On a small tributary which joins the Westfield Little River from the north about eight hundred feet upstream from the Stevens Paper Mill dam, is a small ice pond dam belonging to Edgar Gillette, Westfield, Mass. This structure is located about one quarter of a mile upstream from the mouth of the tributary at a point where the drainage area contributory is only about one-tenth of a square mile.

It is an earthen embankment one hundred feet in length, seven feet in height, and seven feet in width on top. The overflow is located at the west end of the dam and is a ten inch pipe built into a concrete bulkhead at its intake end. The pond formed by the dam is small and, should the structure fail, apparently no material damage would result from the released water.

SALOOMEY DAM.

About one thousand feet upstream from the mouth of Great Brook (described under Southwick), at a point where the drainage area is twenty-five and a quarter square miles, is a dam belonging to S. Salomey, Westfield, Mass.

It is a post deck spillway structure, the crest of which is ten feet north of the north line of the new bridge crossing the brook at this point. The length of the spillway is fifty-five feet and its height eleven feet above the bed of the brook.

The pond formed covers about two acres and is now being used as an ice pond. To the structure there were formerly attached a gristmill and a sawmill. There were both destroyed by fire, the gristmill about fifteen years ago, and the sawmill about six years ago.

UNITED STATES WHIP COMPANY DAM.

Upstream about twelve hundred feet from the Salomey dam, last described, at a point in the brook where the drainage area contributory is twenty-five square miles, is located a dam now or formerly belonging to the United States Whip Company, Westfield, Mass.

This is only a small structure built of loose stone or rip-rap about seventy feet in length and not over four feet in height. It was built as a diversion dam to turn water into a canal that connected with a tannery about one thousand feet downstream. Both tannery and dam were abandoned years ago, and the latter now forms little or no pondage.

LOOMIS DAM.

About a half mile upstream from the U. S. Whip Company dam, last described, at a point where the drainage area contributory is twenty-four square miles, was a dam on property belonging, now or formerly, to Wells Loomis. This structure years ago furnished power to a powder mill, although at present hardly a trace of either mill or dam remains.

CUNNINGHAM DAM NO. 1.

Pond Brook rises in Hampton Ponds in the northeast corner of Westfield, flows south and southwest to Powder Mill Brook, into which it empties about a mile upstream from the mouth of the latter. Pond brook is five miles in length and has a total drainage area of eight and a half square miles.

About a quarter of a mile upstream from its mouth, at a point where the drainage area contributory is practically eight and one-half square miles, is a dam belonging to William Cunningham, 241 Westchester Ave. Mount Vernon, N. Y.

The dam is a dry stone masonry spillway structure thirty feet in length between masonry abutments. Originally this dam formed a sizable pond and the crest of the spillway was thirteen feet in height above the streambed. The spillway was lowered, however, some time ago and is now only six feet above the streambed. At this height the dam forms no pondage and, therefore need, not be further discussed.

CUNNINGHAM DAM NO. 2.

About three-quarters of a mile upstream from the dam last described, at a point where the drainage area contributory is seven and three-quarters square miles, is a second dam belonging to William Cunningham. This is a spillway diversion structure built of stone masonry, twenty-five feet in length, and nine feet in height above the streambed. The crest of the spillway is five feet below the top of the abutments and the pond formed covers about three acres. From the pond extends a canal, three thousand feet or thereabouts in length, to the headgates of the mill downstream. By this arrangement a high head is developed. The mill, which was a paper mill, had not been in operation for some years and was completely razed in 1933.

CUNNINGHAM DAM NO. 3.

The third dam on Pond Brook, also owned by William Cunningham, is located about two miles upstream from the diversion dam last described, at a point where the drainage area is a little over four square miles. It forms a storage known as Chapin Pond which covers ten or twelve acres.

The dam is an earthen structure two hundred and twenty feet in length and thirteen feet in height. It is nine feet wide on top and carries a private driveway. The overflow is at its east end and is a canal or channel which extends downstream for some distance. The channel is eight feet in width and its floor, where it passes through the dam, is five feet below the top of the embankment or the floor of the driveway bridge crossing at this point. There is also a ten inch drainpipe, gated at the upstream toe, which passes through the foundation.

CUNNINGHAM DAM NO. 4.

Upstream about three-quarters of a mile from the Chapin Pond dam, last described, and at the outlet of Horse Pond, so-called, where the drainage area contributory is about three square miles, is the fourth and last dam on Pond Brook, owned by William Cunningham. Horse Pond is a natural body of water which was raised by the dam in question. It now covers an area of about thirty-four acres.

The dam is an earthen embankment one hundred and thirty feet in length, five feet in height, and twenty feet in width on top. The overflow is in the form of a concrete flume one and one-half feet in width and two feet in depth, built into the surface of the embankment near its center. The upstream, or approach end of the overflow is flared out to a width of four and one-half feet.

These four Cunningham dams last described, which are the only dams on Pond Brook, were formerly owned by the Springdale Paper Company and earlier still by the Jessup and Laflin Paper Company.

POWLER DAM.

There are three dams on Powder Mill Brook. This brook rises about a mile southeast of Montgomery Center and flows southeasterly, a distance of seven and a half miles, to the Westfield River, into which it empties a short distance below the mouth of the Westfield Little River. Its total drainage area is twenty square miles.

Upstream about one and a half miles from its mouth, at a point where the drainage area contributory is ten and three-quarters square miles, was a sawmill diversion dam belonging, now or formerly, to Mrs. Fowler, Westfield, Mass. The dam was the highway embankment in which the spillway was built with a bridge over it. The height of the spillway was seven feet above the bed of the brook, with its crest four feet below the flooring of the bridge. From its south end a canal extended a couple of hundred feet along the highway and thence under the highway to the sawmill below.

The sawmill was shut down for good a few years ago and the spillway of the dam lowered, so that the stream is no longer diverted, but flows in its natural course under the bridge.

STANDARD OIL CO. DAM (FORMERLY J. C. BUSCHMAN SONS TOBACCO CO. DAM).

About three-quarters of a mile upstream from the Fowler dam, last described, or about three hundred feet west of North Elm Street, at a point where the drainage area contributory is nine and three-quarters square miles, is a dam belonging to the Standard Oil Co., Westfield, Mass.

The dam is an earthen embankment with a stone masonry spillway near its east end. It is three hundred and ninety feet in length and twenty-seven and a half feet in height. The spillway is forty-eight feet in length and twenty feet in height above the stream, with its crest seven and a half feet below the top of the embankment. The top four feet of the spillway section is built of logs capped with planking. Along the toe of the spillway is laid a horizontal wood apron twenty feet in width.

Formerly this dam formed a pond of about eight acres but a few years ago a section of the spillway twenty-seven feet in length was removed to a level of only eight feet above the streambed so that at present there is practically a free waterway through the dam.

ROCKWELL & MOSELEY DAM.

Upstream about three-quarters of a mile from the dam last described, at a point where the drainage area contributory is five and a half square miles, was a dam which at one time belonged to Rockwell and Moseley, Westfield, Mass.

It was an earthen structure two hundred and seventy feet in length and ten feet in height, to which a powder mill was at one time attached. Only a trace of the structure now remains.

TEOMBICK DAM.

Simons Brook is a small tributary of Powder Mill Brook from the west, emptying into the latter about fifteen hundred feet upstream from the site of the Rockwell and Moseley dam, last described.

On Simons Brook, at a point about five hundred feet east of the Montgomery Road, where the drainage area contributory is three-quarters of a square mile, are the remains of an old dam on property now or formerly belonging to Andrew Teombick, Westfield, Mass.

This dam was built long ago by one Simons, for whom the brook, is evidently named, and had a cotton waste mill attached. This industry was abandoned about fifty years ago, and hardly a trace of the mill or the dam now remains.

FULLER DAM NO. 2.

On the headwaters of Simons Brook, at a point about a thousand feet west of the Montgomery Road, where the drainage area contributory is less than three-quarters of a square mile, is located an ice pond dam owned by Louis Fuller, Westfield, Mass.

The dam is an earthen embankment two hundred and thirty feet in length, seven feet in height, and seventeen feet in width on top. The upstream side is faced with a vertical concrete wall one foot in thickness. The spillway consists of a sloped wooden flume or channel twelve feet in width, extending from the concrete facing wall, through the embankment to the bed of the brook at the toe of the dam. The crest of the spillway is two and one-half feet below the top of the dam.

The structure formed an ice pond covering about three and a half acres until it was breached in 1934. Since that time the structure has been abandoned, and the brook flows through without forming any pondage.

BOISSEAU DAM.

On Moose Meadow Brook (described under Montgomery), at a point about a mile upstream from its mouth, where the drainage area contributory is five and three-quarters square miles, is a dam, now or formerly, belonging to Joseph Boisseau, Westfield, Mass.

To this structure was attached a sawmill which went out of existence over forty-five years ago. Afterwards, the pond formed by the dam was used as an ice pond until the Spring of 1924, when part of the dam was washed away by a flood flow. Since then the structure has been a derelict having a free waterway through it.

CITY OF SPRINGFIELD WATER WORKS SEDIMENTATION RESERVOIR DAM.

This dam forms the sedimentation reservoir at the West Parish Filter Plant. The reservoir, which covers an area of about six acres and has a capacity of forty millions of gallons, has practically no natural drainage area

but is fed by a tunnel and pipeline from the Springfield Water Works Intake Reservoir on the westfield Little River.

The dam is an earthen embankment about seven hundred and thirty feet in length and thirty-five feet in height. It has a top width of sixteen feet with slopes of one on two. The upstream slope is surfaced with rock fill and stone paving and the downstream slope is loamed and seeded. In the center of the dam is a clay puddle core, which in turn contains a concrete cut-off wall. Both core and cut-off wall extend to bed rock.

Two forty-two inch steel pipes encased in concrete are laid side by side through the ledge underlying the dam. A surface spillway channel about thirty feet in width and, with its crest five feet below the top of the embankment, is located in the natural ground at the west end of the dam. This spillway, which seldom, if ever, comes into use, as the flow into the reservoir is controlled by gates, discharges into a small tributary of the Westfield Little River.

The dam is owned by the City of Springfield Water Department.

CITY OF SPRINGFIELD WATER WORKS PROVIN MOUNTAIN RESERVOIR.

The Provin Mountain Reservoir is a unit of the Springfield Water Works Westfield Little River Supply. It is an artificial reservoir located on the crest of Provin Mt. about three miles southeast of Westfield Center. Since the crest of the mountain here forms the boundary line between the towns of Westfield-Agawam, the reservoir lies partly in each town. It has no drainage area of its own, but is fed by gravity through a pipeline from the West Parish Filters, and in turn feeds the distribution system through another pipeline leading to the City of Springfield.

It is a roofed concrete structure about two hundred and ninety feet in width, five hundred and forty feet in length, and twenty-six feet in height having a total capacity of about twenty-seven millions of gallons. The walls of the structure are reinforced concrete, of light section, and backed with rock-fill embankment. The roof consists of groined plain concrete masonry arches supported by concrete piers spaced from fourteen to sixteen feet apart. The entire roof is covered and protected by a sodded layer of soil two feet in thickness. Inlet and outlet gatehouses are provided in the structure for controlling the flow.

The structure is owned by the City of Springfield Water Department. It was originally built in 1908 and enlarged to its present capacity in 1931.

NATURAL PONDS

The three natural ponds in Westfield are the greater part of Hampton Pond, Horse Pond and Buck Pond, all of which are situated in close proximity to each other in the northwest corner of Westfield. Hampton Pond is only separated from Horse Pond by a highway and Horse Pond from Buck Pond by another highway and narrow stretch of land.

HAMPTON POND.

Hampton Pond covers about one hundred and forty-nine acres and has a total drainage area of two and a quarter square miles. It drains into Horse Pond.

HORSE POND.

Horse Pond covers thirty-four acres and has a total drainage area of about three square miles. It is the source of Pond Brook which discharges into the Westfield River by the way of Powder Mill Brook. Although there is now a dam at its outlet (see William Cunningham dam No. 4) this pond was formerly a large natural body of water and so is included with the natural ponds.

BUCK POND.

Buck Pond covers twenty acres and has a drainage area of three and a third square miles. It also drains into Horse Pond.

WESTFIELD RIVER DAMS

There are seven dams on the Westfield River in Hampden County, three of which are in West Springfield, one in Westfield and three in Russell.

The Westfield River is formed in the town of Huntington by the union of its East and Middle Branches about two miles north of Huntington Center, and by its West Branch at Huntington Center. It flows southeast through the towns of Russell and Westfield to the Westfield boundary line, thence forms the West Springfield-Agawam boundary line to the Connecticut River into which it empties. The Westfield River is twenty-three miles in length from Huntington Center to its mouth, and has a total drainage area of five hundred and fifteen square miles.

RAMAPOGUE ICE COMPANY DAM.

About a quarter of a mile downstream from Mittineague, at a point where the drainage area contributory is five hundred and thirteen square miles, is located the first dam from the mouth of the river, belonging now or formerly to the Ramapogue Ice Company.

This is a low timber structure laid diagonally on ledge across the river with the Worthy Paper Mill plant located at its south end, and, until burned down some years ago, the Ramapogue Ice Company plant at its north end. The structure is about five hundred feet in length and not over six or seven feet in height. Because of its low height, and the fact that there is no other dam downstream, it does not appear that any material damage would result from the released water in case the structure failed.

STRATHMORE PAPER CO. DAM NO. 1. (FORMERLY AM. WRITING PAPER CO. DAM).

In Mittineague, about a half mile upstream from the last described dam, at a point where the drainage area contributory is five hundred and twelve square miles, is a dam belonging to the Strathmore Paper Co., Mittineague, Mass.

This is a sawed timber crib spillway structure laid on ledge, four hundred and fifty feet in length between abutments, eighteen and a half feet in height, and forms a pond which covers twenty acres. The downstream face of the structure is perpendicular, and there is no apron attached. From its north end extends a canal about a half mile in length to the mills located in Mittineague.

The dam is about seventy-five years old and originally belonged to the Agawam Canal Co. It was overhauled and extensively repaired a short time ago by the present owner.

STRATHMORE PAPER CO. DAM NO. 2. (FORMERLY AM. WRITING PAPER CO. DAM).

About a half mile upstream from the last described dam, at a point where the drainage area contributory is five hundred and eleven square miles, is another dam belonging to the Strathmore Paper Co., which is the third and last dam on the river in West Springfield.

This is another timber spillway structure three hundred and fifty-eight feet in length and seven feet in height. It was built for the purpose of forming a storage to feed the pond next below, the water being fed through the headgates.

located in the north end of the structure. When in service this dam backed water upstream a distance of about two miles and formed a pond covering about seventy acres. The dam apparently has been abandoned and is a derelict with part of it gone out.

TURNERS FALLS POWER AND ELECTRIC COMPANY DAM.

The next dam on the Westfield River is upstream about seven miles from the Strathmore Paper Co. dam last described. It is located just below the Elm Street Bridge near the center of Westfield, where the drainage area contributory is three hundred and sixty-five square miles, and belongs to the Turners Falls Power and Electric Company.

It is a timber spillway structure four hundred and seventy-five feet in length and seven feet in height which is laid on ledge except at and toward its south end, where it is laid on piles driven into the sand and gravel foundation. At this end are the headgates from which extend the penstocks to the mill building attached. For a distance of eighty feet from the south end, the dam is provided with an inclined apron. This apron was added in order to protect the penstocks from ice, and the toe of the dam from erosion. The dam is not a very old structure having been built about thirty-five years ago.

This dam was formerly known as the Horton dam, which years ago furnished power to a group of industries, including a gristmill, sawmill, machine shop, etc. All of these industries together with the entire power development that is, penstocks, waterwheels, etc., were located on the opposite side of the river from the present mill building. At the time or soon after the dam was rebuilt, that is, about thirty-five years ago, the present mill building was erected, and the entire power development transferred to the south side of the river.

STRATHMORE PAPER CO. DAM (AT WORONOCO).

The next dam upstream on the river is in the town of Russell at the village of Woronoco, where the drainage area contributory is three hundred and fifty-two square miles, and belongs to the Strathmore Paper Company, Woronoco, Mass.

The structure, including the forebay from which the penstocks are laid to the power house, is four hundred and fifty feet in length and twenty-four feet in maximum height. The dam is irregular in plan, partly curved upstream. One section of it is built of concrete and stone masonry, another of timber crib, and a third of dry stone masonry, the two latter sections being backed with concrete and gravel. To the timber crib section is attached a horizontal apron.

The pond formed by the structure covers about thirty acres, and there are two paper mills attached; the old or original mill being located on the south bank close to the south end of the dam, and the other, which is comparatively new, is located on the north bank of the river a short distance downstream from the north end of the dam.

WESTFIELD RIVER PAPER COMPANY DAM.

The sixth dam on the Westfield River, upstream about two and one-half miles from the dam last described, is located at the village of Russell, where the drainage area contributory is three hundred and forty-two square miles. This dam was built in 1905 by the Otis Fibre Board Company and, after several changes of ownership, now belongs to the Westfield River Paper Company.

The westerly or main portion of the dam, about one hundred and seventy-six feet in length and twenty feet in maximum height, is a reinforced concrete, hollow, open face structure of the Ambursen patent type. It consists of an inclined reinforced concrete slab deck twelve inches in thickness, supported by reinforced concrete buttresses spaced ten feet apart on centers. The whole structure is founded upon the ledge rock, which forms the natural bed of the river at this point. The original overflow or rollway section of the dam extended for a distance of one hundred and eight feet from the west abutment to the power house, which was built into the dam near its east end.

In 1908 a new power house, forebay, and penstocks were built on the east bank of the river and the top portion of the old power house removed down to within two feet of the level of the overflow. At the same time a low concrete gravity dam also two feet above the crest of the overflow section and, not more than five feet in height, was constructed from the old easterly abutment, a distance of about one hundred and seventy feet to the bulkhead of the new penstocks. These, and other changes made since the dam was built, have given it a total length, not including abutments, of about four hundred and twelve feet. All of this length can act as the spillway in flood flows, although, ordinarily the water wastes over the original spillway section, which has its crest about two feet lower than the top of the remainder of the dam.

The pond formed by the dam covers about twenty-three acres, and the electric power generated is transmitted from the power house to the paper mill, located on the easterly side of the pond.

CHAPIN & GOULD PAPER COMPANY DAM.

The third dam in the town of Russell, seventh on the Westfield River and last on that river in Hampden County, is located about two and a half miles upstream from the Westfield Paper Co. dam last described, near the Hampden-Hampshire County line, at a point where the drainage area contributory is three hundred and twenty-two square miles, and belongs to the Chapin & Gould Paper Company. The mill attached to this structure is known as the Crescent Paper Mill.

The dam is built on the top of a ledge cascade which follows a curve like the letter S. It is a spillway structure built of stone masonry of heavy section, two hundred feet in length and twenty feet in height. The height of the dam, together with that of the cascade, creates a head or fall of twenty-nine feet. The pond formed by the dam covers a surface area of about ten acres.

WEST SPRINGFIELD

In the Town of West Springfield there are sixteen dams. Three of these dams are on the Westfield River, two are on Darby Brook, one on Bagg Brook, four on Wolf Swamp Brook, one on Block Brook, one on a tributary of Block Brook and four on Black or Bear Hole Brook.

The three dams on the Westfield River, namely, the Ramapogue Ice Co. dam, and the two Strathmore Paper Co. dams are described under Westfield River dams.

There are no natural ponds in West Springfield.

FOSSA DAM.

Darby Brook rises in the town of West Springfield, near the east end of Oak Court and flows easterly to the Connecticut River, into which it empties near the corner of Elm and Riverdale Streets. It is about one and a quarter miles in length and has a total drainage area of three-quarters of a square mile.

About one thousand feet upstream from its mouth, near the southerly side of Riverdale Street and the westerly side of Elm Street, at a point where the drainage area contributory is about a half a square mile, is a dam belonging now to Peter Fossa, and formerly to Harrison Loomis.

The dam is an earthen embankment two hundred and fifty feet in length and eleven feet in height. The main overflow consists of a thirty-six inch concrete pipe, extending through the embankment from a concrete well in the pond to an open channel below the dam. This overflow was installed in 1935 on the advice of the county to insure against topping of the dam in heavy flood flows. There are also two twenty-four inch diameter pipe overflows in the structure, one being provided with a valve and the other with stop planks for regulating the height of the pond.

The pond formed covers about an acre and a half and at one time furnished power to operate a gristmill and a sawmill. More recently there has been an ice cream plant attached, which it appears, has been shut down for good.

WEST SPRINGFIELD WATER WORKS DAM (PIPER RES. DAM).

Upstream about a half mile from the Fossa dam last described, at Piper Road, where the drainage area contributory is about a half square mile, is a reservoir dam belonging to the Town of West Springfield Water Works.

This dam was built in 1875 by a private company to supply water to the inhabitants of the Town of West Springfield. In the early nineties the entire water system, including the reservoir and dam, was taken over from the private company by the town and has been municipal property ever since.

The dam is an earthen embankment which carries the Piper Road, so-called, on its top. It is about three hundred and thirty-five feet in length, fourteen feet in height and thirty-eight feet in width on top. At or near the upstream toe of the embankment there is a gatehouse, from which a sixteen inch supply pipe and a twelve inch waste pipe extend through the foundation of the dam. This latter or twelve inch pipe extends vertically in the gatehouse to the surface of the reservoir, discharges a short distance below the downstream toe of the dam, and formerly constituted the only overflow attached to the reservoir.

This twelve inch overflow pipe proved sufficient to control all flood flows from the reservoir for over fifty years and until the phenomenal railfall

which occurred on this drainage area in the middle of June, 1932. At that time a practically continuous rainfall established a new record of 6.8 inches for a two day period in this vicinity. During the height of the flood the water in the reservoir topped the dam and crossed the macadam surface of the highway thereon, washing out some of the newly built downstream shoulder of the highway.

As a result of this experience, a new surface overflow was added to the structure in the summer of 1933. This overflow is in the form of a culvert, which crosses under the highway surface near the south end of the dam, and then turns and runs along the downstream toe of the dam to the bed of the brook. The upper section of the culvert, or that part under the roadway is of reinforced concrete, one and one-half feet in height and four and one-half feet in width. The next section, sixty feet in length, consists of thirty-six inch diameter vitrified clay pipe, and the lower section is of thirty inch diameter corrugated iron pipe. There are two manholes on the overflow conduit, one at the junction of the concrete and vitrified pipe sections and the other at the junction of the vitrified pipe and corrugated iron pipe sections.

The pond formed by the dam covers about three or four acres.

KNEIP DAM.

Bagg Brook rises in West Springfield on the southeast slope of Prospect Hill, and flows southeasterly a distance of two miles to the Connecticut River, into which it empties a half mile upstream from the mouth of Darby Brook. Its total drainage area is two square miles.

About three-quarters of a mile upstream from its mouth, in the triangle formed by Piper Road, Morgan Road, and Cayenne Street, where the drainage area contributory is one square mile, is located a dam belonging now or formerly to Frank Kneip, 53 Cayenne Street, West Springfield, Mass. The dam is a small concrete structure which, when in service, formed a shallow ice pond one-third of an acre in area. It is now abandoned, a derelict, and forms no pond.

BAGG DAM.

There are four dams on Wolf Swamp Brook, which is a tributary of Bagg Brook from the south, and into which it empties about a quarter of a mile upstream from the mouth of Bagg Brook. The first dam on Wolf Swamp Brook is about one thousand feet upstream from its mouth, and on the west side of the roadway passing near the dam, at a point where the drainage area contributory is three-quarters of a square mile. It is on the grounds occupied by the Springfield Country Club and belongs to Mrs. Aaron Bagg, Riverdale Road, West Springfield, Mass.

The dam is an earthen embankment two hundred and sixty feet in length and fifteen feet in height, faced upstream with a concrete wall. The over-flow is located sixty feet from its north end and is a concrete well, having stop planks five feet in length fastened therein for regulating the height of the pond. From the bottom of the well is laid through the dam a twenty-six inch drain pipe; and from the top, a culvert five feet wide and three feet high. The pond formed covers about ten acres.

LYNCOSKY DAM.

The second dam on Wolf Swamp Brook is about a half mile upstream from the dam last described, and on the westerly side of Piper Road, at a point where the drainage area contributory is somewhat less than one-half a square mile. It belongs to Felix Lyncosky, 573 Piper Road, West Springfield, Mass.

The dam is an earthen embankment faced with concrete, about one hundred and twenty feet in length, five and a half feet in height, and eight feet wide on top. The pond formed by the structure covers about a half acre and is an ice pond. The overflow is a stop plank arrangement three feet in width located near the center of the dam.

SPRINGFIELD ICE COMPANY DAM.

The third dam on Wolf Swamp Brook is located about five hundred feet upstream from the Lyncosky dam, last described, at a point where the drainage area contributory is about one-third of a square mile, and belongs to the Springfield Ice Company, Alden Street, Springfield, Mass.

This is an earthen embankment one hundred and forty feet in length, seven feet in height, and eight feet wide on top. Its spillway is at the west end, and is five feet in width, with its crest two feet below the top of the dam. The pond formed by the structure is three and a half acres in area and is used as an ice pond.

DROBAT DAM.

Upstream about two thousand feet from the last described dam and at the headwaters of Wolf Swamp Brook, where the drainage area contributory is not over one-quarter of a square mile, is an ice pond dam belonging to Joseph Drobat, Morgan Road, West Springfield, Mass.

The dam is an earthen embankment four hundred feet in length and five feet in height. The pond formed is very small, and in case the structure failed, no damage would result from the released water. The overflow is an open ditch in the natural ground at the south end of the dam.

ALLEN DAM.

This structure is located on the headwaters of Block Brook about four hundred feet north of Dewey Street, at a point where the drainage area contributory is not more than a half square mile, and belongs, now or formerly, to Arthur L. Allen, Elm Street, West Springfield, Mass.

The dam is an earthen embankment one hundred and fourteen feet in length, and eight feet in height. It is faced on the upstream side with dry stone and on the downstream side with a concrete wall fourteen inches in thickness. The spillway is in the middle of the structure and built of concrete. It is six feet in length with its crest one foot below the top of the dam.

The pond formed is about two acres in area and rather shallow.

FARNSWORTH DAM.

On a small tributary which enters Block Brook from the north immediately above the Allen dam, last described, is located a small ice pond dam belonging to

C. D. Farnsworth. This dam is about one half a mile upstream from the mouth of the tributary and fifty feet north of the public highway, at a point where the drainage area contributory is about one-tenth of a square mile.

The dam is an earthen embankment about forty feet in length and seven feet in height, faced on the downstream side with stone. In the middle of the dam there is a plank spillway ten feet in length with its crest four feet below the top of the dam. The pond formed covers only about one-third of an acre, and is of small capacity.

WEST SPRINGFIELD WATER WORKS DAM NO. 1.

There are four municipal dams on Black Brook, or as it is sometimes called Bear Hole Brook, in the town of West Springfield. Black Brook is the outlet of Ashley Reservoir, a part of the water supply of the City of Holyoke, from which it flows south through West Springfield to the Westfield River, into which it empties about a half mile downstream from the West Springfield-Westfield boundary line. The brook is four and a half miles in length from its outlet at Ashley Reservoir to its mouth, and has a drainage area of six and three-quarters square miles, including the three square miles contributory to Ashley Reservoir.

The first dam on Black Brook is about one and three-quarters miles upstream from its mouth, at a point a short distance above the West Springfield Water Works pumping station, where the drainage area contributory is five and one-half square miles. This is an earthen embankment two hundred and seventy-five feet in length, twenty-eight feet in height and twelve feet in width on top. The overflow is at its west end and is thirty feet in length, with its crest five feet below the top of the dam. The overflow channel was extended a few years ago to a point forty feet below the toe of the dam. The pond formed by the structure covers about six acres.

WEST SPRINGFIELD WATER WORKS DAM NO. 2.

About a half mile upstream from the last described dam, at a point where the drainage area is five and one-third square miles, is located another dam belonging to the West Springfield Water Works. This is an earthen embankment faced up and downstream with masonry walls laid on a ledge foundation. It is ninety-six feet in length and twenty-one feet in height. At present there is a large concrete culvert extending through the embankment, which provides a free waterway for the passage of the brook. Before this culvert was built in 1933, there was a concrete overflow at the same place. This overflow was six feet in length with its crest six feet below the top of the dam, and was crossed by a small highway bridge.

The reservoir formed by this dam, when it was in commission, covered less than two acres but at present there is no water stored.

WEST SPRINGFIELD WATER WORKS DAM NO. 3.

Upstream from the last described dam about one and a quarter miles, at a point where the drainage area contributory is about three and three-quarters square miles, is another dam belonging to the West Springfield Water Works. This structure is located on the brook within about one-third of a mile of the West Springfield-Holyoke boundary line, and about three-quarters of a mile downstream from the City of Holyoke Ashley Reservoir.

The dam is an earthen embankment one hundred feet in length and nine feet in height. The spillway is located at its east end, is twenty-five feet in length and built of concrete. It discharges the waste water into a channel that extends beyond the toe of the embankment. The pond formed is about two acres in area. The dam, which is breached and, apparently abandoned, was purchased by the West Springfield Water Works for the protection of the watershed.

WEST SPRINGFIELD WATER WORKS DAM NO. 4.

The last or fourth dam belonging to the West Springfield Water Works on Black Brook, is located about fifteen hundred feet upstream from the last described dam, and within one hundred and fifty feet or thereabouts of the West Springfield-Holyoke boundary line, at a point where the drainage area contributory is less than three and one-third square miles.

This dam stands at the top of a natural cascade. It is a dry stone masonry structure, forty feet in length and eight feet in height, to which there were attached a gristmill and sawmill. The dam and mills were abandoned, many years ago and the dam is now a derelict with a free waterway through it.

NATURAL PONDS

There are no natural ponds in West Springfield.

W I L B R A H A M

There are eight dams and two natural ponds in the town of Wilbraham. Of the dams, two are on the Chicopee River and are described under Chicopee River Dams. one on Twelve Mile Brook, one on a tributary of Twelve Mill Brook, one on Calkins Brook, two on the south branch of Mill River, and one on a tributary of the south branch of Mill River.

COLLINS MFG. CO. DAM. (FORMERLY GATES ESTATE DAM NO. 1).

This dam is located on Twelve Mile Brook, described under Monson, at a point about a half mile upstream from its mouth, at Ellis Mills, so-called, where the drainage area contributory is about fourteen square miles, and belongs to the Collins Mfg. Co. North Wilbraham, Mass., who purchased the property in 1927.

The dam is a dry stone masonry structure backed with earth, three hundred and thirty feet in length, sixteen feet in height, and ten feet in width on top. It is curved in plan, concave upstream, and the spillway, which is fifty feet in length (seven feet of which is a stop plank arrangement), is located at the south end of the structure. Toward its north end there is a valve chamber built in the dam from which a gated pipe is laid to the company's paper mill.

The pond formed by the dam covers about five acres.

MRS. W. T. DALEY DAM (FORMERLY GATES ESTATE DAM NO. 2).

Calkins Brook (described under Monson) joins Twelve Mile Brook at Ellis Mills. At a point near its mouth, where the drainage area contributory is practically the total drainage area of the brook, namely, three and a quarter square miles, is located a dam belonging to Mrs. W. T. Daley, North Wilbraham, Mass.

It is a dry stone masonry spillway structure backed with earth, one hundred feet in length and about six feet in height. This structure is now a derelict having a free waterway through it.

GREEN DAM.

This dam is located about a mile southeast of North Wilbraham, on a small tributary from the south, which joins Twelve Mile Brook a few hundred feet above the mouth of the latter.

The dam is in close proximity to the highway, which crosses the brook about a half mile upstream from its mouth, and has a drainage area contributory of not more than one-half a square mile. It consists of a concrete wall on the upstream face backed with earth and rock fill, forming an embankment about seventy feet in length, fifteen feet in height, and twenty feet in width on top. The surface overflow or spillway is five feet in length.

The dam forms an ice pond covering about one-eighth of an acre and is owned by Oliver L. Green, North Wilbraham, Mass.

SPRINGFIELD YOUNG MEN'S HEBREW ASSOCIATION DAM.

On the south branch of Mill River (described under Springfield), at a point two miles southwest of Wilbraham Center, and one and one-quarter miles upstream from the Wilbraham-East Longmeadow boundary line, where the drainage area contributory is a little less than three square miles, is located a dam owned by the Springfield Young Men's Hebrew Association.

This dam is an earthen embankment one hundred and fifty feet in length, nine feet in height and ten feet in width on top, with an upstream slope of one on three and a downstream slope of one on two. Through the center of the embankment is a two inch matched plank sheet piling core wall, extending from hard firm soil in the foundation, to a height of one foot above the water level.

At the end of the dam, in the natural stream bed, there is a large open concrete channel, eleven feet in width and the full height of the dam, with provisions made for the installation therein of stop planks four feet in height. When the stop planks are not in place, the brook flows unobstructed through the open channel, and when they are set in place, a small pond or swimming pool less than one-half acre in area is formed. The stop planks are to be used on the dam, however, only between the fifteenth of June and the fifteenth of September of each year.

The dam was built in 1937 to form a swimming pool for the Y.M.H.A. camp.

BERGERON DAM.

About five hundred feet upstream from the Y.M.H.A. dam, last described, at a point where the drainage area contributory is about two and three-quarters square miles, are the remains of a dam belonging to Alphonse Bergeron, Address Springfield P. O., R.F.D. No. 2.

The structure formed Stebbin's Pond, so-called, and had a sawmill attached, which went out of existence about thirty-five years ago. Only traces of the structure now remain.

POWERS DAM.

Upstream about a mile and a quarter from the Bergeron dam, last described, and on the brook which entered the south end of Stebbins Pond is a dam belonging to James F. Powers, Wilbraham, Mass. This dam is located about two miles south of Wilbraham Center, at a point in the brook where the drainage area is less than one quarter of a square mile.

The dam is an earthen structure, faced upstream by an eighteen inch concrete wall. It is about one hundred and seventy feet in length and eighteen feet in height. The overflow is built of concrete four feet in length and one and one-half feet in depth, countersunk into the top of the embankment near its center.

The pond formed covers about an acre and is used as an ice pond.

NATURAL PONDS

The two natural ponds are Spectacle and Nine Mile Ponds, both of which are located in the northern part of the town of Wilbraham, with one on each side of the Doston Road near North Wilbraham Center. Spectacle Pond has a surface area of twenty acres, a drainage area of a quarter of a square mile, and no visible outlet. Nine Mile Pond has a surface area of thirty-six acres, a drainage area of a quarter of a square mile and discharges into the north branch of Mill River. There is no dam across the latter outlet.

CONCLUSION

The total number of dams listed in this appendix is 356. The town having the greatest number of dams is Monson, which has 43, while the town having the least number is East Longmeadow, which has only one dam.

All types and sizes of dams are included, from small, dry stone mill dams, dating from Revolutionary times, to modern high earthen structures, built within the last few years.

There is one very interesting fact, which a study of the dams of the County brings out, and that is the remarkable manner in which the dams have reflected the changing mode of living of the people in past years.

Among the first and most pressing requirements of the early settlers was the need for power to grind grain and to manufacture implements, lumber, etc., and so we find that, almost without exception, every dam built in the County up to the Civil War period, was built for industrial purposes, that is, to furnish power. These power dams were constructed entirely of native materials, such as earth, timber or stone, and in such numbers as to literally dot the landscape.

By the latter part of the last century practically every site favorable for the production of water power had been developed by the construction of a dam, and was furnishing power to operate some industry. These industries were many and varied, and included sawmills, gristmills, furniture factories, cider mills, powder mills, fulling mills, paper mills, textile mills, tanneries and wagon shops. These small industries operated by water power reached their zenith, in numbers at least, some seventy years ago, and from that time on they have gradually, one by one, been abandoned, until today they are as rare on land as are sailing ships at sea. There are numerous reasons, of course, for this change, among them being the advent of steam and electric power, the shifting of population from the country to the city, the better facilities of transportation, and the trend toward centralization and mass production in industry.

Many of the dams which furnished power to the small industries were abandoned entirely and allowed to become derelicts, while others have been maintained and the ponds converted to other uses, such as for ice and pleasure ponds.

The municipal water supply dams did not begin to appear until around 1870, when the larger towns and cities began to install permanent water supplies. Later, around the turn of the century, the increasing demand for ice in the cities resulted in the construction of numerous ice ponds. The water supply dams have steadily increased in numbers up to the present time, but the encroachment of electric refrigeration can be easily seen in the case of the ice pond dams, of which quite a number have been either abandoned or converted to other purposes in the last five or ten years.

The present tendency seems to be toward dams built to form fishing and pleasure ponds. Within the past few years, the majority of new dams constructed in the County have been built to form pleasure ponds, and in addition many old mill and ice ponds have been converted to recreational uses.

Whatever direction development may take in the future, the never ceasing effort of man in dealing with the forces of nature will always continue. The visible marks of old structures trace the story of the manner in which the inhabitants of Hampden County have adapted the streams and waterways to their service and convenience, and illustrate the incalculable benefits in varied circumstances which may be obtained from the wise utilization of the forces of nature.

On the other hand, people now living have been made aware by recent floods of the danger and destruction which are latent in our natural resources and which, if uncontrolled and let loose may leave havoc and disaster in their path.

James L. Tigh

Consulting Engineer
Holyoke, Mass.

Hampden County Dams 1937 Tighe Report - Cobble Mountain Dam



1937 Reports

Report filed December 31, 1937 by James L. Tighe with respect to recommended repairs in his report of 1934. Reports that the Cobble Mountain Dam, with a height of 243 feet would be the highest earthen dam in the world at this time. (It was built in 1932 and still holds this title as of February, 2009. This is the source of most of the water for the Springfield Area.) Report refers the Hampden County Dams 1936 Report of the Great Flood of 1936.

Dam	Hampden County
Dam	Cobble Mountain Dam
Dam	Westfield Water Works Dam
Dam	Borden Brook Reservoir Dam

REPORT
HALPDEE COUNTY DAMS
1937

Filed, January 16, 1938

JAMES L. TICHE
CONSULTING ENGINEER
100 High Street, Halyburton, Minn.

REPORT
HAMPDEN COUNTY DAMS
1937

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 31, 1937

The Hon. The Board of County Commissioners
Hampden County
Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

The following report is an outline of the work done and matters attended to during the year in relation to the inspection and safety of the dams of the County.

In the beginning, it may be stated that, as referred to and arranged for in 1936, a complete volume of the descriptions of all the dams in the County has been prepared and appended to the report "Hampden County Dams 1936".

In that report, it will be remembered, there is contained a description of the Great Flood of March, 1936 in Hampden County, together with maps and graphs showing the heights of water and areas flooded along the courses of the Connecticut, Chicopee and Westfield Rivers. By adding to this 1936 report an appendix, containing a description of every dam in the County, there is made available in

a single volume a complete and ready reference to all the dams, together with the description and data of the greatest flood ever recorded in the County. This volume, which is now a part of the County Records, should prove to be not only a convenient reference for the County and all interested persons, but also a source of valuable data in the future, especially in regard to the Great Flood, since, it is probable, that another flood of such magnitude will not occur again for centuries.

The appendix makes in itself a rather sizable volume, containing 126 pages. In it is given all the essential data concerning each dam, including the name of the owner, location, drainage area, size and description of the dam and pond, and the purpose for which the structure is being used.

The total number of dams in the County, as listed in this appendix, is 356. Of this number 246 form ponds while 110 are derelicts and do not form ponds. Many of these derelicts were mill dams which once furnished power to small industries and, in many cases, were the centers of thriving hamlets, now practically all deserted.

Within the past ten years twenty-one new dams have been constructed in the County, although, to offset this increase, some of the older dams have passed into the derelict class.

Up until eight years ago the highest dam in the County was the Borden Brook Reservoir dam in Blandford, built in 1910, with a height of seventy-five feet. Since that time two new records for height have been established; first by the Westfield Water Works Storage Reservoir Dam in Granville, completed in 1929, which has a height of ninety feet above the natural streambed, and second by the Cobble Mountain Dam, completed in 1932, which has a height of 243 feet. This latter dam became not only the highest dam in the County and the State, but also the highest earthen dam in the World.

During the year, all of the dams forming ponds were visited and inspected twice. The first inspection was made in the Spring, to check up on any damage done by the Spring freshets. The second inspection was made in the early Fall in order to note any repairs which might be necessary before the winter set in.

Following the usual practice, inspections were made, as far as possible, in company with the owner, and the condition of the dam, together with any repairs needed thereon, was pointed out to him at the time. Besides all owners, whose dams needed repairs, were notified by the County by letter to have such repairs made.

During the year, final decrees of acceptance for substantial repairs made have been issued by the County in the case of the following six dams, namely; Piper Reservoir in West Springfield, raising of overflow; S. C. S. Box Company, Palmer, Mass. temporary repairs to dike; Hampden Brewery Company, Chicopee, extension of culverts; B. E. Campbell, Brimfield, repairs to Mill Pond dam; Strathmore Paper Company, Agawam, repairs to dam; and City of Chicopee overhauling and strengthening of the Bemis dam, so called, in Chicopee. The work of overhauling and strengthening the latter dam was completed during the past summer, and the pond and surrounding property have been converted into a municipal recreation park by the new owner, the City of Chicopee.

During the year two dams have been built in the County. The first of these is located on Elbow Brook in the Brimfield State Forest, and forms what is known as the Dingley Dell Pond. This dam was built by the State of Massachusetts, Department of Conservation, and apparently does not come under the jurisdiction of the County. It is the third dam to be built by the State in the Brimfield State Forest within the past few years.

The other new dam is located on the South Branch of Mill River in Wilbraham and was constructed by the Young Men's Hebrew Association of Springfield.

The plans and specifications for this structure, which forms a small pleasure pond, were approved by the County on July 14th, 1937, and the final decree of acceptance issued on Dec. 22, 1937.

Plans and specifications for two additional dams were also approved by the County during the year, namely, the Hampden Council of Boy Scouts dam at Camp John Robinson in Westfield, and the Charles E. Robbins dam on Conant Brook in Monson. Neither of these dams has been built as yet, but it is understood that the work will be done the coming year.

According to your instructions, following the complaint of Representative John J. Murphy of Westfield, regarding the noise and vibration caused by water falling over the crest of the lower Stevens Paper Mills Inc. dam in Westfield, a conference was held with Representative Murphy and President C. K. Stevens of the Corporation, at which President Stevens expressed the desire of the Corporation to correct the trouble if reasonably possible. It is only fair to state, however, that there is no question of the stability or safety of the structure involved, the only object being to lessen the noise and vibration caused by the water falling over it.

Respectfully submitted,

James L. Tighe

Hampden County Dams Report - 1937



1937 Reports

Report of Hampden County Dams that require repairs by James L. Tighe - November 1, 1937.

City/Town	Southwick
-----------	-----------

City/Town	Monson
-----------	--------

City/Town	Brimfield
-----------	-----------

City/Town	Palmer
-----------	--------

City/Town	Chicopee
-----------	----------

City/Town	Westfield
-----------	-----------

City/Town	West Springfield
-----------	------------------

City/Town	Springfield
-----------	-------------

Dam	Remington Dam
-----	---------------

Dam	Springfield Ice Company Dam
-----	-----------------------------

Dam	Moulton Dam
-----	-------------

Dam	Sun-Up Lamp Works Dam
-----	-----------------------

Dam	Ellis Mills Dam
-----	-----------------

Dam	Sutcliffe Dam
-----	---------------

Dam	Chicopee Manufacturing Company Dam
-----	------------------------------------

Dam	Duckworth Chain Manufacturing Company Dam
-----	---

Dam	Boston Duck Company Dam
-----	-------------------------

Dam	Farant & Creeger Dam
-----	----------------------

Dam	Quinnehtuk Company Dam
Water	Twelve Mile Brook
Water	Ingalls Brook
Water	Hearthstone Quarry Brook
Water	Chicopee Brook
Water	Blodgett Mill Brook
Water	Swamp Brook
Water	Great Brook
Water	Westfield River
Water	Swift River
Water	Mill River

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE
CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

November 1, 1937

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

*This report was
brought in by
Mr. Tighe on Nov. 1, 1937.*

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Massachusetts

Thomas J. Costello, Chairman:

Dear Sir:

In a recent inspection of the dams of the County it was found that repairs are necessary on the dams specified below, and it is recommended that the owners of these structures be notified as to their condition and the need for repairs.

W. C. MOULTON
UPPER DAM ON
BLODGETT MILL BROOK IN BRIMFIELD

At this dam the concrete wall, extending upstream from the southerly spillway abutment, is in poor condition, with a part of it, towards its upstream end, broken down. The plank walls, also, of the sluiceway for drawing down the pond, are rotting out and the earth, which they supported, is falling into the sluice-way. It is recommended that the owner be notified of the need of repairs on these parts of the structure, if the pond is to be maintained, or otherwise the pond permanently drawn off.

CHICOPEE MANUFACTURING CO. DAM
ON HEARTHSTONE QUARRY BROOK
IN CHICOPEE

While this dam is in good condition there is some scouring and washing out of the earth fill under the lower end of the concrete spillway channel, to which the attention of the owner ought to be drawn.

A. D. ELLIS MILLS, INC. DAM
ON CHICOPEE BROOK
IN MONSON
(FORMERLY SUN-UP LAMP WORKS DAM)

The horizontal wood plank apron of this dam is in poor condition and should be either substantially repaired or renewed; likewise, the south channel wall is in need of some repairs. It is recommended that the attention of the owner be drawn to the need of these repairs, if the pond is to be maintained.

WILLIAM B. REMINGTON
DAM ON
TWELVE MILE BROOK IN MONSON

There is a leak through the earth embankment of this dam at a point about 20 feet East of the East end of the spillway. Of late this leak seems to be increasing somewhat in volume and, if allowed to continue, may eventually cause failure of the structure. It is, therefore, recommended that the owner be notified to have this leakage stopped, or otherwise that a free water-way be made through the structure and the pondage discontinued.

RICHARD S. SUTCLIFFE
DAM ON
INGALLS BROOK IN MONSON

Notwithstanding that repairs have been made on this dam it still shows some leakage. Further repairs should be made and the leakage cut off if the pond is to be maintained; otherwise the pond should be drawn off and discontinued.

BOSTON DUCK CO. (UPPER DAM)
ON SWIFT RIVER
IN PALMER

While the dam proper appears to be in good condition there are some minor repairs needed on the downstream end of the westerly abutment wall, and it is recommended that this matter be drawn to the attention of the owner.

PARANT AND CREIGER DAM
ON A TRIBUTARY OF GREAT BROOK
IN SOUTHWICK

While some repairs have been made on this small dam, further repairs are necessary on the plank spillway. Also, the top of the dam should be leveled up and raised somewhat, leaving a swale at one end to act as an emergency overflow in time of high water. It is recommended that the owner be notified about these further necessary repairs.

BALDWIN -
DUCKWORTH CHAIN MANUFACTURING CO.
DAM ON
MILL RIVER IN SPRINGFIELD

This dam is an old wooden crib structure, which has been abandoned for some time. It backs up no water as a part of the structure has been washed away, and the remainder is gradually disintegrating under the action of the stream flow, ice etc. Consequently there is a possibility of damage being done to property downstream by some of the timbers from the derelict floating away especially in high water. It is, therefore, recommended that, since the structure is abandoned for good, the owner be requested to take down and remove the remainder of the structure from the stream bed, or at least, the loose heavy timbers which would be most likely to cause damage.

QUINNEHEUK COMPANY DAM
ON WESTFIELD RIVER
IN WESTFIELD

At a point about a hundred feet from the North abutment of this timber crib dam, a length of some twenty feet of the crest is broken down to a depth of a foot or more. Besides the inclined apron protecting the southerly end of the dam, which rests on a gravel foundation at this point, is almost entirely broken up and washed away. It is recommended that these conditions, and the need of repairs to the structure, be brought to the attention of the owner.

SPRINGFIELD ICE CO. DAM
ON SWAMP BROOK
IN WEST SPRINGFIELD

The concrete overflow channel of this dam is in poor condition, with the walls breaking up and falling into the channel.. It is recommended that the owner's attention be called to this condition so that repairs can be made thereon.

In conclusion it might be stated that where the owner of a dam could be reached on the field, at the time of the inspection, he was personally informed of the condition of his dam and any necessary repairs to be made thereon.

Respectfully submitted

James L. Tighe

Hampden County Dams 1938 Tighe Report



1938 Reports

Report filed December 31, 1938 by James L. Tighe. Refers the Hampden County Dams Reports of the Great Floods of 1936 & 1927. The hurricane flood of September 21, 1938, is the third disastrous flood in Hampden County in a decade. Statistics had predicted that we would not see another flood of such magnitude for 100 years. Unfortunately, they were wrong.

Dam	Hampden County
Water	Westfield River
Water	Swift River
Water	Chicopee River
Water	Connecticut River
Water	Ware River

REPORT
HAMPDEN COUNTY DAMS
1938

For the 1938 Report

.1.

Received March 6, 1939

In connection with the dams of the County, the usual inspection of all dams in service has been made by our Engineer and a report thereon filed.

The most important event of the year was the disastrous flood of September when, for the third time within practically a decade, Hampden County found itself inundated as a result of intense regional rains, which caused the Connecticut River and its tributaries to leap their banks and sweep down the valleys and over the lowlands, doing immense damage to property, roads and bridges, and incalculable injury to industry and business.

Floods of major magnitude had occurred in the year 1927 and 1936, and for another major flood to come so soon after, on the heels of the 1936 flood, so to speak, was entirely unexpected.

The excessive rains which caused this last flood occurred in the period from September 17th to 21st inclusive, and some idea of their intensity may be realized from the fact that on the rain gauge maintained by the Springfield Water Department on the Cobble Mountain watershed, a total of 11.27 inches was recorded, and on the gauge at the Ludlow Reservoir, 12.69 inches.

In the late afternoon of the 21st, when the rain-storm seemed to be abating, a new menace appeared. This was in the form of a tropical hurricane, which had deviated from the usual course of such storms, swept up the Connecticut Valley and passed directly through Hampden County. It did tremendous damage, especially in the rural districts, where crops were levelled, electric power, light and telephone lines felled, windows blown in, sheds and barns blown down, houses unroofed and otherwise damaged, trees uprooted and great havoc done to timber lands. In view of the fury of the hurricane, which took a heavy toll of lives in other sections, it is remarkably fortunate that no lives were lost in Hampden County.

All of this wind damage was done in the short space of about two hours, from 4 to 6 P.M., and meanwhile the streams and rivers continued to rise. The peak flow on the Westfield and Chicopee Rivers and their tributaries was reached a few hours after the passage of the hurricane, that is, in the night of Sept. 21st, while the peak flow of the Connecticut River was not reached until the morning of the 23rd, at which time the water stood 14.9 feet above the crest of the Holyoke dam. This peak level on the Connecticut River was 1.90 feet lower than the peak level of the 1936 flood, but was 0.15 feet higher than that of the 1927 flood. On the gauge at the Memorial Bridge in Springfield the maximum reading was 63.51 feet above mean sea-level, or 2.85 feet lower than the maximum height of the 1936 flood as shown by the same gauge.

On the Westfield and Chicopee Rivers the peak flows were much higher than in 1936 or 1927 and established, so far as is known, new flood heights for these streams. On the Westfield River at Woronoco, the flood level was 12.6 feet above the crest of the Strathmore Paper Company dam, or 3.9 feet higher than the 1936 flood at the same place. Upstream about five miles, at the Chapin and Gould mill, the flood level was 16.5 feet above the crest of the dam, or about 2.5 feet higher than the flood level of 1936. On the Chicopee River at the Turners Falls Power & Electric Co. dam in Chicopee Center the height of the flood level [REDACTED]

[REDACTED] was 9 feet above the crest of the spillway or 1.8 feet higher than in 1936. At the Chicopee Manufacturing Company dam in Chicopee Falls, the height of water above the spillway was 9.1 feet or 1.9 feet above the level reached by the 1936 flood. At the Otis Company dam near the village of Three Rivers the flood level stood 11.6 feet above the spillway or 2.4 feet higher than in the flood of 1936.

Notwithstanding that the 1938 flood, with its intense peak flows, subjected practically all of the dams in the County to an even more severe test of stability than they underwent in the 1936 or 1927 floods, the County was fortunate that no material damage was done by direct failures. Nevertheless, several serious washouts occurred around the ends of some of the dams on the Westfield, Chicopee and Ware Rivers, causing considerable damage to power plants, canal systems and other power appurtenances. On the Westfield River such washouts occurred at the dams of the Strathmore Paper Company at Woronoco, and the Westfield River Paper Company at Russell. On the Chicopee River similar occurrences took place at the dams of the Ames Sword Company at Chicopee Center, the United Electric Light Company at Bircham Bend, the Collins Manufacturing Company at North Wilbraham, the Ludlow Manufacturing Associates at Red Bridge, and on the Ware River at the S.C.S. Box Company upper dam at Thorndike. There were also some washouts at a few of the dams on the smaller streams.

At the Ames Sword Company dam, which had not been in use for years, the flood waters washed through the ground around the southerly end of the dam, where the old headgates for the water turbines were located. The waters sweeping through this washout, pounded against the corner of the Spaulding mill building, located some 200 feet downstream, so as to threaten its stability. In view of this situation, the County Commissioners took immediate steps to save the building by having an opening made through the center of the dam to draw the flow of the river away from it. Later the dam was removed.

At the Red Bridge power development of the Ludlow Manufacturing Associates, there occurred one of the most extraordinary happenings of the entire flood. At this place no damage was done to the dam itself, but the flood waters broke through

the embankment over which Alden Street was laid on the northerly shore of the pond, about one-half mile above the dam, and the released water not only carried away the highway and embankment, but cut a new channel, from 200 to 400 feet in width and from 5 to 20 feet in depth in places, running in a roundabout course, westerly and southerly through the farm lands adjoining, and finally reaching the river at a point near the highway bridge about eight hundred feet below the dam. With the formation of this new channel, it appears that some five or six families, living on the northerly side of the pond, were temporarily marooned.

Although the havoc of altered and sediment-choked river beds, washouts, ruined canals and damaged power houses left in the wake of the flood, presented a most discouraging prospect, nevertheless, in almost all cases, immediate preparations were made to repair the damage done so that normal industrial operations could be resumed.

In connection with repairs and reconstruction work following the flood there were seven petitions for approval of plans and specifications filed with the County Commissioners, all of them during the months of October, November and December, 1938.

These petitions were for repairs at the following dams: the Strathmore Paper Company dam at Woronoco and the Westfield River Paper Company dam at Russell, the Collins Manufacturing Company power dam, in North Wilbraham, the Ludlow Manufacturing Associates dam at Red Bridge the S.C.S. Box Company upper dam at Thorndike, the Ames Worsted Company dam at Holland Pond in Holland, and the Collins Manufacturing Company water supply dam on Twelve Mile Brook in North Wilbraham. All of the plans and specifications accompanying these petitions were referred to James L. Tighe, Consulting Engineer, who made a written report in each case. The action taken on all of these petitions is on file in our records.

Besides the numerous petitions received by the County Commissioners for approval of repairs and reconstruction work following the flood, there was one new dam built in the County during the year. This was the pleasure pond dam of the Hampden Council Boy Scouts of America, located on a small tributary of Great Brook in the City of Westfield. The petition for approval of the plans and specifications for this dam was received on April 26th, 1938 and approval was granted on May 11th, 1938.

On June 8th the Fairview Sportsman's Fish and Game Association filed a petition for approval of plans and specifications for construction of a pleasure pond dam to be located on

Willimansett Brook in Chicopee. Certain changes in the design having been recommended by the County Commissioners, a revised set of plans and specifications were submitted by the petitioner on July 8th, and these were approved. The actual construction of this dam, however, was not undertaken during the year.

In the month of October, the County Commissioners received a petition from the City of Westfield asking for an examination of the Turners Falls Power & Electric Company dam, or old Horton dam, so called, across the Westfield River in Westfield. Acting upon this petition, the County Commissioners caused an examination and report on this dam to be made by their Engineer, following which the Commissioners requested the Company to take down the structure, which it agreed to do.

The City of Westfield also filed a petition in October concerning the automatic flashboards in use on the spillway of the Cobble Mountain dam. Hearings in regard to this matter were held by the County Commissioners, with the result that the substitution of a permanently fixed structure to take the place of the flashboards is being considered.

An experience such as the flood of September last serves to make clear the great responsibility which the County Commissioners bear in connection with their jurisdiction over dams, especially when it is realized what consequences could attend the sudden release of a large body of water upon a populated area.

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 31, 1938

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

In accordance with the provisions of Section 45, Chapter 253 of the General Laws, the following report on the dams in Hampden County for the year 1938 is herewith submitted.

At the beginning, it may be recorded that, for the third time, within practically a decade, Hampden County found itself inundated by a disastrous flood, when intense regional rains in September last, caused the Connecticut River and its tributaries to leap their banks and sweep down the valleys and over the low-lands, doing immense damage to property, roads and bridges, and incalculable injury to industry and business.

Floods of major magnitude had occurred in the years 1936 and 1927, both of which are referred to in past reports on file with the Board, and for another flood of major magnitude to occur so soon after the 1936 flood,

was entirely unexpected, especially, since the mathematicians estimated that, according to the probability of events, there should not be another major flood like the 1936 one for centuries to come.

It is true that the 1938 flood was more local and did not extend over the vast territory covered by the 1936 flood, nor was the peak flow of the Connecticut River as high in 1938 as in 1936. Nevertheless, the 1938 flood, being a major one, and coming on the heels, so to speak, of the 1936 flood, has considerably weakened the belief, of the layman at least, in the theory of the probability of events, when applied to the time element between major flood recurrences.

While, as stated, the peak flow of the flood in the Connecticut River in 1938 was not as high as in 1936, it was, however, somewhat higher than the peak flow of the 1927 flood as measured on the Holyoke dam. Besides, the peak flows of the tributaries of the Connecticut River were materially higher in 1938 than in 1936 or 1927, and consequently it was these higher peak flows that caused so much more damage to industrial establishments along these streams, than was caused by the peak flows of the 1936 or 1927 floods. It was, also, these peak flows of the 1938 flood that subjected the 250 odd dams in the County, in fact all of the dams in the County, with the exception of the Holyoke Dam, to a much more exacting test of stability than the floods of 1936 or 1927.

The flood of 1938 occurred in the week beginning Sept. 18th. Its peak height, after heavy rains on five consecutive days, was reached in the Chicopee and Westfield Rivers in the late evening or night of Sept. 21st, while the peak height of the Connecticut River was not reached until the morning of Sept. 23rd, at which time the water stood 14.9 feet above the crest of the Holyoke Dam. Although this peak height was 1.90 feet lower than the peak height of the 1936 flood, it was 0.15 feet higher than that of the 1927 flood. On the guage at the Memorial Bridge in Springfield, the maximum reading was 63.51 feet above mean-sea-level or 2.85 feet lower than the maximum height of the 1936 flood and 3.35 feet higher than the maximum height of the 1927 flood.

The greater difference between the 1938 and 1927 flood heights in Springfield as compared with that at Holyoke may be attributed to the greater discharge of the Westfield and Chicopee Rivers in the last flood, and to the diking done along the Connecticut River at Holyoke, Chicopee, West Springfield, Agawam and Springfield since 1927.

On the Westfield and Chicopee Rivers the peak flows were much higher than in 1936 or 1927, and established, as far as is known, new flood heights for these streams. The average total rainfall on the drainage area of the Westfield River for the 5 days, Sept. 17th-21st, inclusive, as observed at ten stations, located at various points within this area, was 10.07 inches, or some 28% higher than the average total rainfall connected with the 1936 flood. On the rain guage maintained by the Springfield Water

Department on the Cobble Mt. Reservoir drainage area, which is a part of the Westfield River drainage area, a total fall of 11.27 inches was recorded in the same period.

On the Chicopee River drainage area, the average total rainfall, Sept. 17th-21st, inclusive, amounted to 12.14 inches, or 78 per cent more than the average total rainfall connected with the 1936 flood. At the Springfield Water Works Reservoir in Ludlow, which is located on the lower part of the Chicopee River drainage area, the total rainfall recorded, Sept. 17th-21st, inclusive, was 12.69 inches, while in the town of Barre, located near the headwaters of the Ware River, which is one of the three principal tributaries of the Chicopee River, the extraordinary total of 17.03 inches was recorded in the same period.

The result of these excessive rainfalls, coming at a time when the ground was already saturated by a season of higher than normal precipitation, was to produce in the Westfield and Chicopee Rivers and their tributaries, peak flood flows which exceeded any before recorded.

On the Westfield River, at Woronoco, the peak of the flood was 12.6 feet above the crest of the Strathmore Paper Co. dam, or 3.9 feet higher than the 1936 flood peak at the same place. At the Westfield Paper Co. dam in the village of Russell, the peak of the flood was 14 feet above the crest of the railway section, or 3.5 feet higher than the 1936 flood peak. Upstream about two miles, at the Chapin and Gould mill, the peak of the flood was approximately 16.5 feet above the crest of the dam, or about 2.5

feet higher than the flood peak of 1936. While it is extremely difficult to ascertain the discharge of a river in flood time with an accuracy comparable to that which can be obtained in periods of normal flow, nevertheless, it is estimated that the peak discharge of the Westfield River at Woronoco in the 1938 flood was in the neighborhood of 190 cubic feet per second per square mile of drainage area, at the Westfield River Paper Co. dam 176 cubic feet and at the Chapin & Gould dam 156 cubic feet.

On the Chicopee River in Chicopee, the peak of the flood measured 9 feet above the crest of the spillway of what was formerly the Dwight Mfg. Co. dam, and which is now owned by the Turners Falls Power Co. This was 1.8 feet higher than the 1936 flood peak at this dam. Farther upstream, at the Chicopee Mfg. Co. dam in Chicopee Falls, the peak of the flood was 9.1 feet above the crest of the spillway or 1.9 feet higher than the 1936 flood peak. At the Red Bridge dam the flood peak was 11.4 feet above the crest of the spillway or 3.6 feet higher than in 1936. At the Otis Co. dam, next to the village of Three Rivers, the flood peak was 11.6 feet above the spillway or 2.4 feet higher than in the 1936 flood. As to the peak flow of this river, computations would indicate that at the old Dwight Mfg. Co. dam it was at the rate of 43 cubic feet per second per square mile.

On the Ware River, a tributary of the Chicopee River, the flood peak, as noted at the mill of the S. C. S. Box Co. in the village of Thorndike, was $7\frac{1}{2}$ feet higher than it was in 1936. The discharge of this river at Coldbrook, some 25

miles upstream from the village of Thorndike, where the drainage area of the stream is 98 square miles was, as measured by the Engineering Department of the Metropolitan District Water Supply Commission, 144.6 cubic feet per second per square mile of drainage area, or $2 \frac{1}{3}$ times greater than the peak flow in the flood of 1936.

In the late afternoon of the same day that the Chicopee and Westfield Rivers reached their peak flows, that is, on Sept. 21st, a violent tropical or semi-tropical hurricane struck Hampden County and almost all of New England. It did tremendous damage, especially in the rural districts of the County, where crops were levelled, electric power, light and telephone lines felled, windows blown in, sheds and barns blown down, houses unroofed and otherwise damaged, trees uprooted and great havoc done to woodlands.

This hurricane started in the West Indies, struck the New Jersey coast, thence travelled northward to the Southern New England coast and up the Connecticut River Valley, through the State of Vermont into Canada, where it expended itself around midnight. Its greatest fury, it appears, was along the beaches of Rhode Island and Connecticut, where whole communities were wiped out and over 500 lives were lost.

It might be of interest to state that the village of Amherst, in Hampshire County, was directly in the center of the path of the hurricane, which uprooted many of the old and majestic trees growing in the college grounds, and all over this college town.

It might be of interest also, to know that the hurricane was directly responsible for a washout in a small earthen fish-pond dam in the town of Tolland. This peculiar happening occurred when a large tree, growing near the toe of the dam, was felled by the high wind and when its upheaved roots, which extended under the dam, breached the structure. No damage, however was caused by this failure, because of the small volume of water in the pond.

Notwithstanding that the 1938 flood, with its intense peak flows, subjected practically all of the dams in the County to an even more severe test of stability than they had undergone in the 1936 or 1927 floods, it was fortunate that no material damage was done by direct failures. Nevertheless, several serious washouts occurred around the ends of some of the dams on the Westfield, Chicopee and Ware Rivers, causing considerable damage to power plants, canal systems and other power appurtenances.

At the village of Woronoco in Russell, where the Strathmore Paper Co. mill is located, the Westfield River topped and broke through the bank of the mill pond, at a point about 100 feet East of the easterly end of the dam, washing away thousands of cubic yards of earth from the high bluff which rises steeply from the river bank at this point, and establishing an entirely new river channel, which left the mill pond empty and the mill dam literally high and dry. Much of the sand and gravel washed away was deposited by

the flood in the river bed below the power house, where it blocked the stream, raising the tail water level and interfering with the operation of the power plant.

About two miles upstream, at the dam of the Westfield River Paper Co. in the village of Russell, the high water washed out the natural ground behind the heavy concrete wall, which formed the easterly side of the forebay canal leading to the power house. It also toppled over the wall, scoured a breach some fifty feet in width through the natural hill against which the power house abutted, and damaged the tracks of the Boston and Albany Railroad which pass close by. As was the case at Woronoco, much of the washed out material was deposited in the river bed in such a way as to almost completely block the tail race of the power plant, and thus interfere seriously with the operation of the water wheels.

On the Chicopee River in Chicopee Center, at the Ames Sword Co. dam, which had not been in use for years, the flood waters washed through the ground around the southerly end of the dam, where the old headgates for the water wheels were located. The waters, sweeping through this break, pounded against the corner of the Speulding mill building, located some two hundred feet downstream, so as to threaten its stability. In view of this situation, the County Commissioners took immediate steps to save the mill building, by having an opening made through the center of the dam, to draw the flow of the river away from the building. Later, the dam was removed.

At the United Electric Light Co. dam, located at Bircham Bend on the Chicopee River, the flood water stopped the bank of the mill pond South of the dam, and cut a new channel over 100 feet in width and some 15 feet in depth, through the natural ground between the power house and the highway leading to Indian Orchard. The engineer's house, a large frame structure, lay directly in the path of the new channel, and was swept away down the river, leaving hardly a trace to show where it had stood.

At the Collins Mfg. Co. plant on the Chicopee River in North Wilbraham, a washout some 60 feet in width occurred at the southerly end of the canal headgate structure, which is located on the southerly side of the river. The flood waters poured through this breach into the power canal, then washed out a section of the canal embankment so that the power plant was put out of operation. It is interesting to note that the old wooden truss bridge across the river, about 200 feet below the Collins dam, was still standing after what was very likely the greatest flood of its career, although the southerly roadway approach leading to it had been entirely washed away.

Two and a half miles upstream from the Collins Mfg. Co. dam, at the Red Bridge power development of the Ludlow Manufacturing Associates, there occurred one of the most extraordinary happenings of the entire flood. At this place no damage was done to the dam itself, but the flood waters

broke through the northerly bank of the pond, along which Alden Street was laid, at a point about one-half mile above the dam, and the released water not only carried away a considerable length of the highway, but cut a new channel, from 200 to 400 feet in width, and from 5 to 20 feet in depth in places, running in a roundabout course, westerly and southerly through the farm lands adjoining, and finally reaching the river at a point near the highway bridge, about eight hundred feet below the dam. With the formation of this new channel, it appears that six families, living on the northerly side of the pond, were temporarily marooned. Much damage was done, also, to the tracks of the Athol Branch of the Boston & Albany Railroad along this stretch of the river.

At the hydro-electric plant of the Otis Co. on the Chicopee River in the village of Three Rivers, a washout occurred in the natural ground adjoining the South side of the powerhouse, although the dam itself was not injured in any way.

Of all the communities in Hampden County which suffered damage by the flood, there is little doubt that the village of Thorndike in the town of Palmer was the hardest hit. This village is located at a hairpin bend on the Ware River, and the S. C. S. Box Co., the principal industry in the village, maintains two power dams, one just above, and the other in the center of the village, each dam having

attached a power canal leading to large mill buildings located on the river bank. During the height of the flood the river topped and washed a breach through the combination earth and timber dike at the easterly end of the upper dam, and also broke through a portion of the canal embankment. The flood waters also, completely washed away portion of Church Street, about 300 feet in length, between the canal bridge and the river bridge, although neither of the bridges themselves was damaged. At the lower dam, the swollen river broke through the wooden canal headgate structure, and washed out practically the whole length, some 500 feet, of canal embankment. As a result of the damage done by the flood, both power developments were put out of service, although neither of the dams themselves was affected in any way.

On the Swift River in the village of Bondsville, the wooden canal headgate structure attached to the upper dam of the Boston Duck Co. was demolished during the flood. It was thought, however, that this damage was caused by the hurricane which accompanied the flood, rather than by the flood itself. The dam proper was not injured.

At the power plant of the Central Massachusetts Electric Co. located in the village of Blanchardville on the Quaboag River, the horizontal wood apron or planking attached to the downstream toe of the dam was battered and in places broken up by the force of the water pounding over the

spillway. The dam itself, which is a timber crib structure loaded with rock, was not damaged.

At the Hamilton Reservoir dam in the town of Holland, there was a small washout in the natural ground and in the public highway, which passes near the dam at this point. This reservoir is a large body of water covering about four hundred and forty-five acres, and the dam which forms it, a heavy dry stone masonry structure 16 feet in height and 176 feet in length, built some 75 years ago, is in good condition.

In addition to the washouts around the power dams on the larger rivers, there were a few washouts at sawmill, ice and pleasure pond dams etc. on the smaller streams and brooks. Such washouts occurred at the old Burdick carriage shop dam and the Monson State Hospital ice pond dam in Monson, the Alden sawmill dam in Ludlow and the Farrar sawmill dam in Brimfield. The two latter structures have not been used for sawmill purposes for a long time, and the Farrar dam especially, has been a derelict backing up little or no water for years.

At the Campbell sawmill dam on the Quinebaug River in Brimfield, the highway adjoining the dam, known as Mill Street, which also acted as an embankment of the mill pond, and which had been rebuilt after the flood of March, 1936, was again topped and badly damaged. According to measurements taken on the inundated land south of the village, the last flood was over 2 feet higher than the 1936 flood.

On Twelve Mile Brook in Wilbraham, the valve chamber attached to the water supply dam of the Collins Mfg. Co. was washed away, with the result that the pond was emptied and put out of service.

In the town of Tolland, the Ward fish pond dam was breached, as has already been described, by the felling of a large tree in the hurricane. This dam was a low earthen structure 265 feet in length and 6 feet in height to the crest of the spillway. No damage was done by the released water.

Although the havoc of altered and sediment-choked river beds, washouts, ruined canals and damaged power houses, left in the wake of the flood, presented a most discouraging prospect, nevertheless, in almost all cases immediate preparations were made to repair the damage done so that normal industrial operations could be resumed.

In connection with repair and reconstruction work following the flood, there were seven sets of plans and specifications filed with the County for approval, during the months of October, November and December, 1938. All of these plans and specifications were examined by your engineer, and a report and recommendations on each filed with your Board.

The first petition for approval of repairs was filed on October 25th by the Collins Mfg. Co., for temporary repairs to be made on its water supply dam on Twelve Mile Brook in North Wilbraham. These plans and specifications

were examined and recommended for approval, with the provision that the repairs were temporary only, and that permanent repairs on the structure would be made at a later period.

On November 14th, plans and specifications were filed for approval by the Ames Worsted Co., for work to be done in repairing a small washout at the East end of the Hamilton Reservoir dam in the town of Holland. A report was made recommending these plans and specifications for approval.

The Strathmore Paper Co. on November 14th, filed plans and specifications for the construction of a concrete dam and earthen dike to close the new channel which the flood made, North of the mill dam on the Westfield River at Woronoco. Shortly after the plans were filed, and before the County had acted upon them, the State, as a part of its program of restoration work, took over the building of the earthen dike, so that on December 20th the Strathmore Co. submitted a revised plan, which covered only the construction of the concrete dam. This revised plan showed a dam of somewhat heavier section than the first submitted, and was recommended for approval.

On December 13th, the Collins Manufacturing Co. filed a plan and specifications for the repair of the washout around the South end of its dam on the Chicopee River at North Wilbraham. This plan and specifications were examined and recommended for approval.

On December 13th, also, plans and specifications were filed by the S. C. S. Box Co. for the repair of the washout which occurred in the natural ground West of the canal headgates at their upper dam in the village of Thorndike. These plans and specifications were examined and recommended for approval. Other restoration work done at Thorndike included the reconstruction of the East dike at the upper dam, and the rebuilding of the upper canal embankments, so that at the end of the year the upper power development in this village had been put back into service. It should be noted that much of this work of reconstruction was done by the Works Progress Administration of the Federal Government.

The manner in which the Chicopee River cut a new channel around the Red Bridge power development of the Ludlow Manufacturing Associates in Ludlow, has already been described in this report. The Company filed plans and specifications for the construction of a combination sheet piling and earthen dike to be built across the head of this new channel, on the northerly side of the pond, to close off the breach permanently, and restore all of the river flow to its former course. These plans and specifications were examined and recommended for approval.

The Westfield River Paper Co. filed plans and specifications for the construction of a new concrete canal wall and a combination steel sheet piling and earthen dike, at the washout around the easterly end of its dam, on the

Westfield River at Russell. These plans and specifications were examined and recommended for approval.

Besides the numerous petitions made to the County for approval of repair and reconstruction work, as a result of the flood, there was one new dam built in the County during the year. This was the dam of the Hampden Council, Boy Scouts of America, located on a small tributary of Great Brook in the city of Westfield. The original plans and specifications for this structure were filed with the County on July 21st, 1937, but the actual construction was not begun during that year. On April 26th, 1938, revised plans and specifications for the construction of this dam were filed, and following the approval of these by the County, the dam was built during the past Summer.

On June 8th, plans and specifications for the construction of a fishing pond dam on Willimansett Brook in Chicopee were filed by the Fairview Sportsman's Fish and Game Association. Certain changes in the design having been recommended by the County, a revised set of plans and specifications were submitted by the petitioner on July 8th, and these were approved. The actual construction of this dam, however, was not undertaken during the year, and it is thought that the project may have been postponed indefinitely.

In the month of October the County received a petition from the City of Westfield asking for an examination of the Turners Falls Power & Electric Co. dam or the old Horton dam, so called, across the Westfield River in Westfield. This dam was a low timber spillway structure, some seven

feet in height, which formerly furnished power to numerous small industries, but which in late years had been abandoned, so that it was going into a state of disrepair and becoming a derelict. Upon receiving this petition, the County Commissioners caused an examination and report on this dam to be made, following which the Company was requested to take down the structure, which it agreed to do.

The City of Westfield also filed a second petition in October concerning the automatic flashboards in use on the spillway of the Cobble Mountain Dam. Hearings in regard to this matter were held by the County Commissioners, with the result that the substitution of a permanently fixed structure, to take the place of the flashboards, is being considered.

In concluding this report, it might be pointed out that an experience such as the flood of September last serves to make clear the great responsibility which the County bears in connection with its jurisdiction over dams, especially when it is realized what consequences could attend the sudden release of a large body of water over a populated area.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1939 Tighe Report



1939 Reports

Report filed December 30, 1939 by James L. Tighe. Repairing washouts from the flood of 1938 has been ongoing all year. Eight specification plans were approved by Hampden County.

City/Town	Palmer
-----------	--------

City/Town	Ludlow
-----------	--------

City/Town	Tolland
-----------	---------

City/Town	Wilbraham
-----------	-----------

City/Town	Blandford
-----------	-----------

City/Town	Holland
-----------	---------

City/Town	Granville
-----------	-----------

City/Town	Russell
-----------	---------

Dam	Boy Scouts of America, Hampden Council
-----	--

Dam	Red Bridge Dam
-----	----------------

Dam	Cherry Valley Dam
-----	-------------------

Dam	Cobble Mountain Dam
-----	---------------------

Dam	Hampden County
-----	----------------

Name	Ames Worsted Company
------	----------------------

Name	Ward, R P
------	-----------

Name	Springfield City Water
------	------------------------

Name	United Electric Light Company
------	-------------------------------

Name	Strathmore Paper Company
------	--------------------------

Name	Ludlow Manufacturing Company
Name	Westfield Paper Company
Name	Colgan-Sherman Corporation
Name	Collins Manufacturing Company
Water	Ware River
Water	Westfield River
Water	Bircham Bend
Water	Chicopee River
Water	Great Brook
Water	Hamilton Reservoir

REPORT
HAMPDEN COUNTY DAMS
1939

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 30, 1939

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Massachusetts

Charles W. Bray, Chairman,

Dear Sir:

In the report of last year, a detailed description was given of the great hurricane-flood, which occurred on September 21, 1938, and of its effect on the dams of the County. It will be remembered that, notwithstanding that there were much higher flood flows on many of the streams than any previously recorded, nevertheless, with the exception of a couple of sawmill derelicts there were no direct dam failures in the County. There were, however, a number of washouts around the ends of some of the dams, chiefly on the Westfield, Chicopee and Ware Rivers.

All during the Fall of last year, and during the present year, the work of repairing these washouts, and other damages caused by the hurricane-flood, has

.2.

been going on, until at the present time, the work of restoration is practically completed.

In every case where important or extensive repairs were required, plans and specifications of the proposed work were first filed with and approved by the County, and the work inspected at frequent intervals during the actual construction.

Needless to say the examination of these plans and specifications filed, the examination on the field of the work to be done, and the inspection of the work as it progressed to completion, required considerable time and attention.

In connection with this repair and reconstruction work, resulting from the hurricane-flood, there were eight sets of plans and specifications approved by the County. These plans and specifications were as follows:

.1.

Plans and specifications filed by the Westfield River Paper Co. for the construction of a new concrete canal wall, and a combination steel sheet piling and earth dike on the Westfield River at Russell.

.2.

Plans and specifications filed by the Strathmore Paper Co. for the construction of a concrete dam to close the new channel made by the flood, a short distance north of the mill dam on the Westfield River at Woronoco.

.3.

.3.

Plans and specifications filed by the Collins Mfg. Co. for the repair of a washout around the south end of the dam on the Chicopee River at North Wilbraham.

.4.

Plans and specifications filed by the United Electric Light Co. for the removal of the power dam at Bircham Bend on the Chicopee River, and the construction of a dike across the washout at this location.

.5.

Plans and specifications filed by the Ludlow Mfg. Co. for the construction of a dike at the head of the new channel cut by the flood around the Red Bridge power development dam on the Chicopee River in Ludlow.

.6.

Plans and specifications filed by the City of Springfield Water Department for repairs to the downstream embankment of the Cherry Valley dam in Ludlow.

.7.

Plans and specifications filed by R. P. Ward for the repairs on a small pleasure pond dam in Tolland, damaged by a tree nearby being uprooted thus breaching the structure.

.8.

Plans and specifications filed by the Colgan-Sherman Corporation for the repair of a washout in the earth dike near the west end of the upper dam on the Ware River at Thorndike.

In addition to the above described repair work, there was one new dam built in the County during the year. This was the pleasure pond dam of the Fairview Sportsmen's Fish and Game Association in Chicopee, the final plans and specifications for which were approved by the County on October 18th, 1939.

In July, the County approved plans and specifications filed by Arthur D. Norcross for the construction of a pleasure pond dam on Vineca Brook in the town of Wales. The construction of this dam, however, has not been commenced up to the present time.

In the latter part of the year, the town of Ludlow filed plans and specifications for the repair of the Harris Pond dam in that town. This dam, which once furnished power for a sawmill and sash factory, had been breached and out of service since 1935. The plans and specifications filed covered the repair of the washout, and were approved by the County on December 13, 1939. The work has not been completed as yet, and is still in course of construction.

The A. D. Ellis Company No. 4 dam on Chicopee Brook in Monson, about which the County sent a notice to the owner regarding some repairs necessary thereon, was removed completely from the stream, and the site paved with heavy stone.

As was stated in the report of last year, the County received a petition from the City of Westfield in October, 1938, asking for an examination of the old Horton timber dam on the Westfield River in that town. This dam had not been in service for some years and was practically a derelict. Following an examination and report thereon the County requested the owner, the Turners Falls Power and Electric Company, to take down and remove the structure.

The work of removing the dam was begun in the latter part of 1938 and was completed in the present year.

At Bircham Bend on the Chicopee River, where a serious washout occurred during the hurricane-flood of September, 1938 the stone masonry dam was entirely removed from the river bed during the year, and an earthen dike constructed across the breach made by the flood. As a result of this work, the river is now restored to the original channel in which it flowed before there was any dam built or power development at this place.

It should be noted that during this year three sizable dams which had furnished power for manufacturing purposes have been taken down entirely, namely, the old Horton dam, so called, in Westfield, the United Electric Light Co. dam at Bircham Bend, and the A. D. Ellis Company dam No. 4 in Monson.

It will be of interest, also, to note that the four Cunningham dams on Pond Brook in Westfield are now owned by the City of Westfield, which, it seems, plans to develop the property into an extensive recreational area. These four dams were formerly owned by the Springdale Paper Company, and furnished power and process water to a paper mill located near the mouth of the brook. The making of paper in this mill was discontinued some years ago and the mill structure was razed in 1933.

Mention was made in the report of last year that the City of Springfield Water Department was considering the substitution of a permanently fixed structure to take the place of the automatic flashboards then in use on the spillway of the Cobble Mountain dam.

Inasmuch as this subject, regarding the use of flashboards on the Cobble Mt. dam, is an important one, which should be placed on record, the following account of the matter is set forth here at length.

The spillway of the Cobble Mountain Reservoir is located about a quarter of a mile south of the dam. It is an open channel excavated in the solid ledge rock, with its crest 135 feet in length and as originally built, 28 feet lower than the top of the dam. In the design and construction of the reservoir, provision was made for the use of wooden flashboards 7 feet in height on the crest of the spillway, and such flashboards were in use from the time the reservoir was put into service up until the end of 1938.

These flashboards were arranged in three sections, each section being 45 feet in length, and were supported by wrought iron pipes, so designed and arranged that the sections would automatically collapse when the water level in the reservoir raised to certain predetermined heights. The first section was arranged to go out when the water level stood at a height of $2\frac{1}{4}$ feet above the

top of the boards, the second section to go out when the water rose $3\frac{1}{2}$ feet above the top, and the third section when the water rose to $4\frac{1}{2}$ feet above the top. When the last section of flashboards collapsed, the water in the reservoir would be standing at a height of $11\frac{1}{2}$ feet above the spillway crest or $16\frac{3}{4}$ feet below the top of the dam.

The first actual test that this automatic flashboard installation received was during the hurricane-flood of September, 1938. During that great flood, the reservoir raised to a level of $2\frac{1}{4}$ feet above the top of the flashboards, and at this point the first section functioned as expected, collapsing at practically the exact predetermined height of water. After the first section went out, the reservoir level began to drop, so that the remaining two sections did not come into operation.

Shortly after the hurricane-flood, objections were raised to the sudden release of water by the operation of these automatic flashboards, and in October, 1938, the County received a petition from the City of Westfield asking that an examination be made into the use of the flashboards.

Hearings were held in connection with this matter, and as a result, the City of Springfield, on January 13th, 1939, filed plans and specifications for a permanent concrete structure to replace the automatic flashboards.

These plans and specifications were approved by the County on January 18th, 1939, and the structure was completed shortly after. It is a concrete masonry wall 7 feet in height, that is, the same height as the flashboards which it replaced, and extends across the entire length of the spillway. It is 2 feet in thickness on top, six feet in thickness at the base, with upstream face vertical and downstream face sloped or battered. In other words, the spillway crest has been raised 7 feet by the building of this structure, and no flashboards are to be used thereon in the future. With the new construction, the freeboard or height from crest of spillway to top of dam is 21 feet.

During the year, all of the dams forming ponds were visited and inspected, these inspections being made, as far as possible in company with the owners. In addition, where a dam was found to be in need of repairs, the County called the owner's attention by letter to the need for these repairs. Such letters were sent in the case of the following dams; Huntington Fire District dam in Blandford, Springfield Five Cents Saving Bank dam (formerly Chapin & Gould Dam) in Russell, Moulton dam (formerly Brimfield Brick Co. dam) in Brimfield, Powers ice pond dam in Wilbraham and the Westfield River Paper Company dam in Russell.

.9.

During the year, eight final decrees of acceptance were issued by the County, seven of these being for substantial repairs made in connection with existing dams, and one for the construction of a new dam.

These final decrees of acceptance were issued as follows:

.1.

Westfield River Paper Company, acceptance of the construction of new concrete canal wall and dike at washout around dam on Westfield River at Russell.

.2.

Ames Worsted Company, acceptance of repairs to washout in natural ground and highway adjoining Hamilton Res. dam in Holland.

.3.

United Electric Light Company, acceptance of the removal of the power dam at Bircham Bend on Chicopee River and construction of dike across the washout at this location.

.4.

Ludlow Manufacturing Company, acceptance of the construction of dike at head of new channel cut by flood around Red Bridge development on Chicopee River in Ludlow.

.5.

City of Springfield Water Department, acceptance of repairs to downstream embankment of the Cherry Valley dam in Ludlow.

.6.

City of Springfield Water Department, acceptance of the raising of the Cobble Mt. dam spillway with a permanent concrete masonry structure to take the place of flashboards thereon.

.10.

.7.

R. P. Ward, acceptance of repairs on small pleasure pond dam in Tolland.

.8.

Hampden Council, Boy Scouts of America, acceptance of the construction of a pleasure pond dam on tributary of Great Brook in Westfield.

Respectfully submitted,

James L. Tighe

Hampden County Dams Report - 1940



1940 Reports

Report of Hampden County Dams that require repairs by James L. Tighe - July 30, 1940.

Abutters Eastern States Exposition

City/Town Wilbraham

City/Town Chester

City/Town Springfield

City/Town Brimfield

City/Town Blandford

City/Town Agawam

City/Town Chicopee

City/Town West Springfield

Dam Powers Dam

Dam Moulton Dam

Dam Eastman Dam

Dam Korzen Dam

Dam Tunxis Hunting & Fishing Club Dam

Dam Agawam River Jetty

Dam Lemieux Dam

Dam Zavatkay Dam

Dam Hogan Dams

Dam	Worthy Paper Company Dam
Dam	Huntington Fire District Dam
Dam	Chicopee Manufacturing Corporation Dam
Person	Tolland
Water	Chicopee River
Water	Blodgett Brook
Water	Dingle Brook
Water	Agawam Company Brook
Water	Westfield River
Water	Cold Brook
Water	Mill River
Water	Agawam River
Water	Twining Brook
Water	Pond Brook

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

July 30, 1940

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Charles W. Bray, Chairman:

Dear Sir:

An inspection by your engineer of the dams of Hampden County has been recently made regarding their condition and safety. In this inspection it was found that the following dams need some repairs, and it is recommended that the owners of these structures be notified by the Board as to their condition.

AGAWAM

Paul Korzen lower dam
on the Agawam Co. Brook

This structure requires some earth-fill around the spillway on the top and downstream slope, also, the ditch, which carries off the run-off from the steep hill at the northerly end of the dam, should be cleaned up in order to prevent this run-off from flowing over and causing washouts in the dam.

BLANDFORD

Huntington Fire District
water supply storage dam
on Cold Brook

The downstream embankment on each side of the spillway of this dam is wearing down and should be repaired. When such repairs are being made, this embankment should be sloped, at least, 1 on 2, well loamed and grassed.

BRIMFIELD
W.C. Moulton upper dam
on Blodgett Brook

As the owner of this dam was notified in 1939 of the condition of the structure and, inasmuch, as no repairs have been made on it since, it appears that he does not consider it economical to make such repairs, and intends to allow it to become a derelict. If this is the case, a free water way for the brook should be made in or around the dam, or through the penstock sometime during the present year, in order to prevent pondage, which might become released and do damage downstream, especially in times of flood flow.

CHESTER
Harry O. Eastman dam
on the Middle Branch
of the Westfield River

The crest of the planking of this log dam, for a distance of 40 feet from its east end abutment, is broken off and should be repaired. Likewise, sags in the rest of the structure should be taken out and the crest levelled up.

CHICOPEE
Chicopee Mfg. Corporation
old drinking water supply dam
on small tributary of Chicopee
River

Some repairs are needed on this dam, especially along the downstream ends of the masonry abutments, where the adjoining earth has been washed away.

CHICOPEE
Lucien Lemieux dam
on small tributary of
Chicopee River

To make this structure more safe, the south bank of the overflow channel, from the end of the concrete part of the channel downstream, should be raised, at least, a couple of feet more, for a distance of fifty feet; also, the down stream slope strengthened by making the top part of the slope the same as the lower part, that is, 1 on 2½ approximately.

CHICOPEE
J. Stevens Arms Co.
private reservoir dam on
tributary of Chicopee River

Some repairs are needed on the brick work in the downstream face of this structure over the steel waste pipe, where some of the bricks have fallen out of place.

GRANVILLE
Noble & Cooley Drum Shop
storage dam on
Seymour Brook

The spillway and spillway channel concrete masonry, also, the concrete walls around the pond are showing some disintegration and should be repaired.

LONGMEADOW
Club Realty Co. dam
on Longmeadow Brook

The concrete channel retaining walls of the overflow of this dam are in poor condition, since they are badly cracked and only kept from collapsing by improvised log bracing. Substantial repairs should be made on this spillway and the walls sufficiently strengthened to be stable without bracing or propping of any kind.

SOUTHWICK
W.A. Purtell & W.C. Stauble
dams on Sodom Brook

There are some small leakages through the masonry of the upper dam, which should be attended to. These leakages, very probably, can be stopped by the depositing of gravel-fill along the upstream face of the dam. A large limb has broken off a tree growing near the spillway channel and fallen across the channel, partly blocking its discharge. This limb should be removed and the channel cleaned of all debris etc. In the lower dam, the broken slabs of concrete in the old ruptured spillway should be removed, and a more free water-way made for the brook.

SPRINGFIELD
Peter F. Hogan dams
on Dingle Brook

At the upper dam, the gate-well of the drain pipe, built of brick and concrete, is in poor condition and should be repaired. Likewise, the brush and weeds growing in the swale at the north end of the structure should be cut down and removed. If the pond formed by the lower dam is to be maintained, the washout at the east end of the dam should be filled with gravel, thoroughly compacted and the whole structure overhauled and put in a safe condition.

TOLLAND
Tunxis Hunting & Fishing Club
lower dam on Pond Brook

There is a small sag in the top of this dam at a point about 50 feet from its north end, caused, apparently, by a washout, which should be levelled up by gravel-fill thoroughly compacted.

TOLLAND
F.F. Zavatkay dam
on Twining Brook

About 50 feet from its westerly end there was a small washout in this structure, which caused some of the stones in the downstream facing wall to become dislodged. These stones should be reset and the washout repaired.

WEST SPRINGFIELD
Worthy Paper Co. dam
on Westfield River

This timber structure is in need of considerable repairs, as the crest is sagged at different places especially towards its east end, thus showing that the timbers beneath are becoming disintegrated.

WEST SPRINGFIELD
Agawam River Jetty
at Eastern States
Exposition Grounds

The jetty built a few years ago by the Town of West Springfield, along the easterly bank of the Agawam River, deserves some attention, as the top stones of the extension to the jetty proper, running down stream, have been dislocated and should be set back in place.

WILBRAHAM
James F. Powers ice pond dam
on tributary of South Branch of
Mill River

There is a washout in this dam next to the south end of the overflow, which should be repaired by filling the washout with gravel-fill well tamped and compacted.

If the owners of these structures are notified of their condition within the near future, there will be sufficient time for the necessary repair work to be done during the present Summer and Fall.

Respectfully submitted,

James L. Tighe

Bought in by
m. F. Igle, on
August 2, 1940.

Hampden County Dams 1940 Tighe Report



1940 Reports

Report filed December 31, 1940 by James L. Tighe. Repairs from the flood of 1938 have been completed. New projects are underway to further protect the valley including Knightville Reservoir Dam in Huntington, Hampshire County and the immense Quabbin Reservoir and Winsor Dam.

City/Town	Palmer
City/Town	Russell
City/Town	Huntington
Dam	Westfield River Paper Company Dam
Dam	Winsor Dam
Dam	Hampden County
Name	Metropolitan District Water Supply Commission
Water	Chicopee River
Water	Knightville Reservoir
Water	Quabbin Reservoir
Water	Swift River
Water	Westfield River
Water	Connecticut River

.REPORT
HAMPDEN COUNTY DAMS
.1940

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 31, 1940

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Charles W. Bray, Chairman,

Dear Sir:

In accordance with the provisions of Section 45, Chapter 253 of the General Laws, the following report on the dams in Hampden County for the year 1940 is herewith submitted.

In the first place, it may be mentioned that during the present year, the last of the repair and reconstruction work on washouts and damage done by the hurricane-flood of September, 1938, has been completed. It will be remembered that there were a number of washouts around the ends of some of the dams, chiefly on the Westfield, Chicopee and Ware Rivers. All of these washouts have now been repaired, and the work of reconstruction is completed.

In all of the reconstruction work, the experience of this flood, which established new record flood heights on practically all of the brooks and rivers in the County, except the Connecticut River on which the record flood height occurred in March 1936, was used in designing the new protection works, dikes, etc., around the various dams. As a result, it may be stated that there is much less likelihood of such extensive damage by washouts in future floods.

On the Westfield River, a large flood-control storage reservoir is now being built by the Federal Government at Knightville in the town of Huntington, Hampshire County. This Knightville Reservoir will be located on the East Branch of the river, at a point where the drainage area contributory is about 164 square miles, that is, it will control the run-off of approximately one-third of the total drainage area

of the Westfield River. It will have a surface area of about 960 acres, or approximately 85 per cent of that of the Cobble Mountain Reservoir, and a storage capacity of 16 Billion Gallons, or approximately 70 per cent of the capacity of Cobble Mountain Reservoir. The dam forming the Knightville Reservoir will be an earthen hydraulic-fill structure 160 feet in height above the streambed, or slightly less than two-thirds the height of the Cobble Mountain Dam.

The Knightville Reservoir will be operated exclusively for the purpose of flood control, that is, it will ordinarily be kept either empty or with very little water stored, so that in the event of heavy run-off or flood flow at any time, the gates can be closed and the flood waters impounded or held back in the reservoir. After the passing of the high-water period in the river, the gates will be opened and the water slowly released, until the reservoir is once again emptied and left in readiness for the next flood.

The affect of such regulation is to level up or make more uniform the flow of the river throughout the year. With proper operation, this control project should result in appreciable benefit to the riparian owners on the Westfield River in Hampden County, both in reducing flood heights and in increasing, to some extent, the stream flow in times of low water.

The second recent development affecting future flood flows in Hampden County, is the construction of the Quabbin Reservoir on the Swift River by the Metropolitan District Water Supply Commission. This reservoir, which is now in process of filling, is to be an additional source of public water supply for the City of Boston and surrounding communities. The dam forming the reservoir is located in Hampshire County, at a point on the Swift River about six miles upstream from the village of Bondsville in Palmer, where the drainage area contributory is 186 square miles.

The Quabbin Reservoir, when filled, will be of immense size. It will extend from the dam northerly up the Swift River Valley for a length of approximately eighteen miles, and have a maximum depth of water of 150 feet. With a surface area of approximately 39 square miles and a capacity of 415 Billion Gallons, it will be one of the largest, if not the largest, water supply storage reservoirs in the world. A better idea of the magnitude of the Quabbin Reservoir may be obtained by comparison with the Cobble Mountain Reservoir which is now one of the permanent outstanding features of Hampden County, by stating that the surface area of the Quabbin Reservoir, will be about twenty-two times as great as that of Cobble Mountain while the volume of water stored will be approximately eighteen times as great.

Although the Quabbin Reservoir will have a capacity eighteen times that of the Cobble Mountain Reservoir, nevertheless, the dam which forms it, known as the Winsor Dam, will be only 170 feet in height above the streambed, as compared with a height of 243 feet for the Cobble Mountain dam. Incidentally, when the Cobble Mountain dam was completed, in 1932, it had the distinction of being the highest earthen dam in the world, and, as far as is known, it still retains this title.

Unlike the Knightville Reservoir on the Westfield River, the Quabbin Reservoir will not be used primarily to impound and hold back flood flows for the purpose of relieving flood conditions on the lower reaches of the river. Because of its location, however, which is such that it controls seven-eighths of the drainage area of the Swift River and one-quarter of the entire drainage area of the Chicopee River, and also due to the great surface area of the reservoir over which flood waters will be dispersed or spread out, even though the reservoir is filled, there is no doubt that this Quabbin Reservoir will have an appreciable effect in lessening the severity of future flood flows, not only on the Swift River, but also on the Chicopee River.

During the year, there were three dams under construction in the County, all of them being built by Arthur D. Norcross on Vineca Brook in the town of Wales, for recreational and conservation purposes.

All three dams are earthen structures, one being located on the site of the old Peck mill dam, so-called, which had been abandoned and a derelict for some years, while the others are located upstream from the Peck dam, at intervals of about one-half and one-quarter miles. The plans and specifications for these dams were approved by the County, and frequent inspection visits were made during the progress of the construction work. At the end of the year, all three dams had been practically completed, except for a few minor details which will be finished up in the Spring.

On August 31, 1940, the Westfield River Paper Company filed plans and specifications for major alterations and repairs to their power dam on the Westfield River at Russell. This dam, built in 1905, was a reinforced concrete structure of the Ambursen type, that is, it was of hollow, open front design, with an inclined deck supported on piers. With this particular construction, the resistance or strength of the dam was derived, in a major part, from the weight of the water bearing upon the upstream, inclined deck. The dam was a well designed, stable structure, which passed through four major floods, including the Great Flood of March, 1936 and the phenomenal hurricane-flood of September, 1938, with little or no damage to the dam itself.

Of late years, however, erosion and spalling of the thin concrete deck and piers, which is quite common in concrete structures exposed to the action of water, had progressed to a considerable extent. Consequently, it was decided to convert this dam from a hollow, inclined deck structure, into a solid gravity dam, by filling in all the bays or cells between the piers with mass concrete. The plans and specifications for making this change were approved by the County on September 18, 1940, and the work was completed before the end of the year. In its present state, this dam is a solid block of concrete, having materially greater stability than before the alteration was made.

As to the inspection of all the dams, it may be stated that every structure in service in the County was inspected during the year, and all owners whose dams needed repairs were notified by the County by letter to have such repairs made.

Such letters notifying owners of the need for repairs were sent in the cases of the following dams;

Korsen dam in Agawam, Huntington Fire District dam in Blandford, Moulton upper dam in Brimfield, Eastman dam in Chester, Chicopee Mfg. Corporation water supply dam in Chicopee, Noble and Cooley dam in Granville, two Purtell and Stauble dams in Southwick, Club Realty Co. dam in Longmeadow, two Hogan dams in Springfield, Tunxis Lower dam in Tolland, Zavatkay dam in Tolland, Worthy Paper Co. dam in West Springfield, Agawam River Jetty at Eastern States Exposition grounds in West Springfield and Powers dam in Wilbraham.

In the case of the Chicopee Manufacturing Corp. water supply dam, listed above, the small pondage formed by this structure had not been used for some years, and the owner, instead of maintaining the pond any longer, has taken down and removed the spillway section of the dam, thus making a free waterway for the brook, so that no pondage will be formed in the future.

Relative to the Lemieux ice pond dam in Chicopee, also listed above, plans and specifications for overhauling and strengthening this structure were approved by the County in October, 1936. The work, however, was never fully completed, and consequently no final decree of acceptance has been issued by the County. In November of the present year, the ice house attached to the pond was destroyed by fire, following which the pond was emptied and, it is expected, will not be refilled.

During the year, five final decrees of acceptance were issued by the County. Three of these were for substantial repairs made in connection with existing dams, and two for the construction of new dams.

These final decrees of acceptance were issued to:

1. Collins Manufacturing Company; acceptance of repairs of a washout around the south end of dam on the Chicopee River at North Wilbraham.

2. Collins Manufacturing Company; acceptance of temporary repairs on water supply dam on Twelve Mile Brook in Wilbraham.

3. Colgan-Sherman Corporation; acceptance of repairs to earth dike near west end of upper dam on Ware River in Thorndike.

4. Strathmore Paper Company; acceptance of construction of concrete dam closing new channel made by hurricane-flood in September, 1938, north of the mill dam on the Westfield River at Woronoco.

5. Fairview Sportsman's Fish and Game Association; acceptance of construction of new dam on Willimansett Brook in Chicopee.

In December of 1940, the Holyoke Water Power Company installed a floating ice boom at its power dam on the Connecticut River at Holyoke. This boom is for the purpose of preventing the entrance of ice blocks from the river into the canal system.

It consists of four heavy timber frames or rafts coupled together by chains and wire cables, extending from a point on the Holyoke bank of the river, a short distance above the canal headgate structure diagonally across the canal entrance, to the westerly abutment wall of the Holyoke dam. On the river bank, the boom is secured to a heavy anchorage of concrete, while at the outer end it is anchored to the massive stone abutment wall of the dam.

The construction of this boom, does not come under the jurisdiction of the County, nor will it in any way affect the stability of the dam. Mention of it, therefore, is made in this report, only as a matter of record for the future. It may be of interest, also, to note that during the year a concrete fishway or fish ladder was added to the Holyoke dam at its extreme northerly end, which is in Hampshire County.

Respectfully submitted,

James L. Tighe

Hampden County Dams Report - 1941



1941 Reports

Report of Hampden County Dams that require repairs by James L. Tighe - August 22, 1941.

Abutters Eastern States Exposition

City/Town Springfield

City/Town Longmeadow

City/Town West Springfield

City/Town Tolland

City/Town Wilbraham

City/Town Holland

City/Town Chicopee

City/Town Chester

City/Town Granville

City/Town Brimfield

City/Town Agawam

City/Town Monson

City/Town Ludlow

City/Town Palmer

Dam Labossiere Dam

Dam Agawam River Jetty

Dam Club Realty Company Dam

Dam	Powers Ice Pond Dam
Dam	Bay State Thread Works Dam
Dam	Hamilton Woolen Company Dam
Dam	Ackerman Dam
Dam	Noble & Cooley Drum Shop Dam
Dam	Graves Dam
Dam	Humpage Dam
Dam	Baldwin-Duckworth Chapin Corporation Dam
Dam	Nicolet Dam
Dam	Hampden Bleachery Dam
Dam	Battista Bonomi Ice Pond Dam
Dam	Tunxis H F O Club Dam No 2
Dam	Pierce Dam
Water	Mt Dumpling Brook
Water	Agawam River
Water	Pond Brook
Water	Saloomey Dam
Water	Great Brook
Water	Longmeadow Brook
Water	Stebbins Pond
Water	Elbow Brook
Water	Worthington Brook

Water	Seymour Brook
Water	Calkins Brook
Water	Chicopee River
Water	Higher Brook
Water	Westfield River
Water	Holland Brook
Water	Mill River

*This report was brought
in by Mr. Tighe on
August 22, 1941.*

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

August 22, 1941

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

Having completed an inspection of all the dams in
Hampden County with regard to their condition and safety
I wish to report that some repairs, mostly of a minor
nature however, are needed on certain structures, as
outlined below, and, also, to recommend that the attention
of the owners of these structures be drawn by the Board
to the advisability of making such repairs.

AGAWAM

Battista Bonomi ice pond dam
on the North tributary
of Worthington Brook

This dam is an earthen embankment faced
on the upstream side with a concrete
wall, a foot or so in thickness, which is
showing erosion and which should be
repaired, if the structure is going to be
kept in use.

BRIDFIELD

F. R. Humpage dam
on Elbow Brook

Repairs are needed on this structure,
especially at the southerly side of the
flume pipe, where, it appears, there is
some leakage.

CHESTER
A. F. Pierce dam
on the Westfield River

The planking of this low log crib spillway dam is broken down along its top and should be repaired by new planking, if the structure is to be continued in use.

CHICOPEE
Hamden Bleachery dam
on small tributary of Chicopee River

This dam is in fair condition but there is need of repairs on the concrete retaining wall running upstream from the east end of the structure.

GRANVILLE
Noble & Cooley Drumshop storage dam
on Seymour Brook

The overflow channel walls of this structure, especially the southerly wall, are showing erosion which should be repaired and stopped.

HOLLAND
Hamilton Woolen Company dam
on Holland Brook

At the back of the channel wall running downstream from the easterly end of the structure and, at a point about halfway to the highway bridge, there is a washout which should be filled in with gravel.

LONGMEADOW
Club Realty Company dam
on Longmeadow Brook

Although the attention of the Club Realty Company was drawn to the poor condition of the spillway channel of this structure last year, no repairs have as yet been made thereon, and it is advisable that the attention of the Club be drawn a second time to the matter by the Board.

LUDLOW

Mrs. Frank W. Ackerman lower dam
on Higher Brook

On this dam some repairs are needed on the end of the concrete channel spillway, where the concrete has broken off; also, the filled-in washout, caused by the hurricane flood of Sept. 1938, should be shaped up in swale fashion with the bottom of the swale lower than the top of the dam. The purpose of the swale is to carry the water around the end of the dam in high flood flow, instead of allowing it to go over the top of the structure and destroy it.

MONSON

E. L. Graves dam
(formerly Nicolet dam)
on Calkins Brook

This structure is in fair condition but the swale channel constructed some years ago at its east end has been filled in. This swale, or auxiliary spillway, should be reopened and put in its former condition.

PALMER

Boston Duck Co. upper dam
on the Swift River.

This dam is in fair condition but the attention of the Boston Duck Company should be drawn to the downstream corner of the west abutment of the structure, which needs some repairs.

PALMER

Hermas C. Jabossiere dam
on Mt. Dumpling Brook

This dam is in fair condition but its spillway channel contains a considerable accumulation of debris, which should be removed.

SPRINGFIELD
Baldwin-Duckworth Chain Corp. dam
on Mill River

This timber structure has not been in use for some years, and gradual disintegration and attrition have reduced it to about one-third of its original height. The portion now remaining consists only of the foundation timbers, extending to a height of about 3 feet above the streambed. This remaining portion of the dam should be removed, as it is a source of danger to other structures below because of the possibility of heavy timbers being worked loose and carried downstream in times of flood.

SPRINGFIELD
Bay State Thread Works dam
on Mill River

Part of the toe of this concrete dam has been removed, apparently at the time of the construction of the new concrete wall, built downstream from the dam, in connection with the diversion of the stream at a point a short distance below the dam. This part removed should be replaced so that the dam will be restored to its original section. Also, the spalling and erosion of the concrete on the downstream face of the dam should be repaired.

TOITLAND
Tunxis H. F. O. Club No. 2 dam
on Pond Brook

The top of this structure shows considerable settlement and has two washouts, one of which is of considerable size. It also shows some disintegration in the log cribbing on its downstream side, all of which should be repaired.

WESTFIELD
S. Salomey dam
on Great Brook

Although repairs were made on this structure a couple of years ago, nevertheless, it shows considerable leakage now, which should be repaired.

WEST SPRINGFIELD
Agawam River Jetty
at Eastern States
Exposition Grounds

The top or coping stones of the extension to the easterly end of the jetty have been slid off, apparently by ice thrust, and should be re-set in cement mortar.

WILBRAHAM

James F. Powers ice pond dam
on tributary to Stebbins Pond

While some repairs were made on this earthen structure last year, there are still repairs to be done on the upstream concrete facing of the embankment, and on the concrete wall on the easterly side of the overflow.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1941 Tighe Report



1941 Reports

Report filed December 31, 1942 by James L. Tighe. Total number of dams in Hampden County now 365. All were inspected. Due to war conditions, the larger dams can only be approached by those with proper identification issued by the county engineer.

Dam Hampden County

d25 084

REPORT
HAMPDEN COUNTY DAMS
1941

Filed - January 6, 1942

JAMES L. TIGHE
CONSULTING ENGINEER
189 High Street, Holyoke, Mass.

REPORT
HAMPDEN COUNTY DAMS
1942

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 31, 1941

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

I wish to report that all of the dams forming ponds within the County have been visited and inspected during the present year with regard to their safety.

The inspection was made during the summer, after which letters were prepared and sent by the County notifying the owners of structures in need of repairs of the advisability of making such repairs. Such letters were sent in the case of the following dams:

Bonomi dam in Agawam, Humpage dam in Brimfield, Pierce dam in Chester, Hampden Bleachery Co. dam in Chicopee Falls, Noble & Cooley Co. dam in Granville, Hamilton Woolen Co. dam in Holland, Club Realty Co. dam

in Longmeadow, Ackerman lower dam in Ludlow, Graves dam in Monson, Boston Duck Co. dam in Palmer, Labossiere dam in Palmer, Baldwin-Duckworth Chain Co. dam in Springfield, Bay State Thread Works dam in Springfield, Tunxis Club dam in Tolland, Salomey dam in Westfield, Agawam River Jetty in West Springfield and Powers dam in Wilbraham.

A second inspection or check-up of the above listed dams, was made in the late fall.

In the case of the Baldwin-Duckworth Chain Company dam, noted above, this was an old abandoned timber structure located on Mill River in Springfield, which had been reduced by disintegration until only the foundation timbers remained. The County recommended the removal of these timbers because of the possibility of their being worked loose, especially in times of flood flow, and carried downstream to damage other structures and property below. This recommendation was acted upon, and the remaining timbers removed, so that this potential danger is eliminated.

There were no new dams built in the County during the year, although the three Norcross dams in Wales, built in 1940, were finished up and put into service. In connection with these dams, three sets of amended plans and specifications, covering minor changes made during the construction work, were filed with the County and approved. Final decrees of acceptance of the construction

of these three dams were issued by the County on December 24, 1941. No other decrees of acceptance, either for new structures or for substantial repairs on existing dams were issued during the year.

In March 1941, the County received a communication from the Selectmen of Palmer relative to the use of flashboards on the old Otis Company dam, located on the Chicopee River about one-half mile downstream from the village of Three Rivers. The question involved was not one concerning the stability or safety of the dam, but rather, concerning the effect of the flashboards in raising the height of the backwater upstream in the village of Three Rivers, in time of flood. An investigation and report on this matter was made to the County.

During the year of 1941, work was completed on the so-called Mill River Conduit in Springfield. This conduit is a part of the flood-protection works constructed along the Connecticut River bank by the City of Springfield following the great floods of 1936 and 1938. The conduit is a large, underground pipe or culvert extending from a point on Mill River immediately below the Bay State Thread Works dam, westerly for a length of about one-third of a mile to the Connecticut River. The purpose of the conduit is to discharge the flow of Mill River under pressure through the flood protection dike and into the Connecticut River, when the latter is at high flood stage. With the

completion of this conduit, Mill River is now enclosed throughout its entire lower course, and the old river bed has been or will be filled in.

The construction of this conduit has permanently diverted all of the flow of Mill River from the sites of the old Bemis & Call Company privilege and the old Richards privilege.

Respectfully submitted,

James L. Tighe

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 5525
MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

December 31, 1942

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

During the present year, the work of carrying out the provisions of the General Laws with regard to the safety of the dams in the County, numbering all told 365, has been attended to in the usual manner.

Every dam in service was examined at least once during the year, and in addition, the more important structures, as well as some others which seemed to warrant closer attention, were visited and inspected as often as was thought advisable. Examinations were made, as far as possible, in company with the owner, and the condition of the dam was discussed with him at the time. In many cases, any repairs or changes which might be needed on the structure were explained directly to the owner, especially where the repair or maintenance work required, was of a minor nature, or where the dam or reservoir was such, as could not be considered a menace to life or property.

In the case of other dams, such as where the owner was not available at the time of examination, or the dam was an important structure, or the repairs needed were of such nature that they should be brought to the owner's attention formally, letters were prepared and sent out by the County, advising the owners of the need for making repairs or alterations upon their dams. Twelve of such letters were sent during the year, on the following dams:

The Humpage dam in Brimfield; Fairview Sportsmen's Club dam in Chicopee; City of Chicopee (Bemis) dam in Chicopee; Hampden Bleachery Company dam in Chicopee; Rorabaugh lower dam in Holland; Central Mass. Electric Company dam in Palmer; Palmer Town Farm dam in Palmer; Strathmore Paper Company fire protection reservoir dam in Russell; Fitzgerald dams (2) in Springfield; Worthy Estate dam on the Westfield River in West Springfield; Gengreau dam in Wilbraham and Powers dam in Wilbraham.

In connection with the regular examination of all the dams, it might be mentioned that due to war conditions, guards are now maintained at most of the larger power and water supply dams in the County, and only those having proper identification are allowed to approach these structures. The letter of identification given by the County to your engineer for this purpose proved invaluable as without it access to many of the dams would have been denied.

There were no new dams built in the County in 1942, nor were there any built in 1941, thus making a period of two years in which no permits for the construction of new dams have been issued by the County. This is somewhat of a change from former years, when there were usually several new dams constructed each year. The reason for the change, no doubt, is the lessening of interest in everything not connected with the war effort.

The last actual count or 'census' of all the dams in the County was included in the appendix to the report on the dams for the year 1936. That tabulation showed a total of 356 dams in the County, of which 246 were in service and forming ponds, while the remaining 110 were abandoned or derelict structures, which no longer formed ponds.

The following tabulation, made up in the same manner, shows the number of dams in each city or town of the County at the present time. It will be noted that, in the past five years, the total number of dams has increased by only 9, making a total of 365 dams in the County at present. The number of dams in active service and forming ponds, however, is 5 less, or 241 dams in service at the present time.

The explanation of these changes is in the construction of new dams, the restoration of old, abandoned structures, the abandoning of other structures, and in a few cases, the complete removal of certain dams, such as the old Ames Sword Company dam on the Chicopee River, which was completely taken down after the hurricane-flood of September, 1938.

TABLE SHOWING
NUMBER OF DAMS AND NATURAL PONDS
IN EACH TOWN IN HAMPDEN COUNTY
AS OF DECEMBER, 1942

NAME OF TOWN	DAMS FORMING PONDS	DAMS NO LONGER FORMING PONDS	TOTAL NUMBER OF DAMS	NATURAL PONDS
Agawam -----	9	4	13	0
Blandford -----	6	7	13	2
Brimfield -----	12	9	21	1
Chester -----	5	8	13	1
Chicopee -----	21	11	32	0
East Longmeadow ----	0	1	1	0
Granville -----	13	10	23	2
Hampden -----	11	4	15	0
Holland -----	5	5	10	2
Holyoke -----	15	5	20	0
Longmeadow -----	2	2	4	0
Ludlow -----	9	3	12	7
Monson -----	35	9	44	2
Montgomery -----	4	3	7	1
Palmer -----	19	4	23	3
Russell -----	8	0	8	0
Southwick -----	6	5	11	2
Springfield -----	15	5	20	10
Tolland -----	7	4	11	2
Wales -----	9	7	16	0
Westfield -----	13	11	24	3
West Springfield ---	10	6	16	0
Wilbraham -----	7	1	8	2
TOTAL -----	241	124	365	40

In April, the County received a request for permission to lower the pond level at the Springfield Country Club dam in West Springfield in connection with alterations to be made in the grounds adjoining the pond. An investigation of this matter was made, and it was found that the alteration proposed consisted in the replacing of an old wood trestle footbridge, which crossed a swampy area at the upper end of the pond, with a raised earth-fill foot-path. Inasmuch as this work would have no effect on the safety or stability of the dam, no permit from the County was necessary.

On October 21, 1942, Raymond M. Fletcher filed with the County plans and specifications for substantial repairs to be made upon his upper dam located on Great Brook in Southwick. This dam was an old earthen structure which had been in service until a washout occurred in the spillway section in the great flood of March, 1936. Since that time the pond has remained empty, and the dam out of service. The plans and specifications filed covered the repair of the washout in the spillway and also the strengthening somewhat of the dam. These plans and specifications were approved by the County on October 21, 1942.

In November an investigation was made of a very small earthen pleasure pond dam being built by Mr. Donald Moore on a tributary of Longmeadow Brook in Longmeadow. This dam is located just east of Longmeadow Street and about 400 feet north of Mill Road, at a point where the drainage area contributory

is approximately one-fifth of a square mile. It was found that because of the small drainage area, the little pondage formed and the low height of the structure, this dam does not come under the laws relating to the safety of dams. Mention of it is made here, however, as a matter of record for the future.

During the present year, the State Department of Public Works re-located and rebuilt the Shaker Road, so called, in Longmeadow, so that this highway, which formerly passed a short distance below the Longmeadow Country Club dam, is now located directly on top of that structure. The dam was an earthen structure, with a concrete overflow and overflow channel at its northerly end. In the building of the highway, the dam was considerably increased in section by the placing of additional earth fill, so as to serve as the highway embankment. The old surface overflow was eliminated and a new concrete culvert overflow was constructed at the old brook channel near the center of the dam. The work done at this dam in the building of the highway, has added considerably to the stability of the structure.

Another dam affected by highway construction of the State Department of Public Works during the year was the Block dam, located on Higher Brook in Ludlow. In this case, the dam was strengthened considerably as a result of the re-building of the highway known as Holyoke Street, which crosses Higher Brook over a masonry culvert immediately below or downstream from the dam.

In the highway reconstruction work at this point, the road was raised some 3 or 4 feet above its former level, a new concrete wing wall was extended from the highway culvert upstream to connect with the easterly abutment of the dam overflow, and the entire area between the highway and the earthen part of the dam was filled in with earth. It is understood that the rebuilding of this highway was done as a national defense project in connection with the Westover Air Base.

Still another work undertaken and completed by the State Department of Public Works during the present year, was the rebuilding of the canal headgate structure and the canal embankment connected with the lower dam of the S. C. S. Box Company on the Ware River in the village of Thorndike. This headgate structure and canal embankment were washed out in the hurricane-flood of September, 1938, although the dam to which they are attached was not damaged in any way. With the restoration of the headgate structure and canal embankment, this sizeable water power development will be returned to service.

Respectfully submitted,

James L. Tighe

Hampden County Dams Report - 1942



1942 Reports

Report of Hampden County Dams that require repairs by James L. Tighe - August 28, 1942.

City/Town	Palmer
-----------	--------

City/Town	Chicopee
-----------	----------

City/Town	Brimfield
-----------	-----------

City/Town	Holland
-----------	---------

City/Town	Wilbraham
-----------	-----------

City/Town	West Springfield
-----------	------------------

City/Town	Springfield
-----------	-------------

City/Town	Russell
-----------	---------

Dam	Chicopee City Parks Dam
-----	-------------------------

Dam	Fairview Sportsmen's Fish & Game Association Dam
-----	--

Dam	Hampden Bleachery Company Dam
-----	-------------------------------

Dam	Central Massachusetts Electric Company Dam
-----	--

Dam	Strathmore Company Fire Protection Dam
-----	--

Dam	Humpage Dam
-----	-------------

Dam	Palmer Town Farm Dam
-----	----------------------

Dam	Rorabaugh Dam
-----	---------------

Dam	Fitzgerald Dam
-----	----------------

Dam	Powers Dam
-----	------------

Dam	Gengreau Dam
Dam	Worthy Dam
Dam	Bemis Dam
Water	Dingle Brook
Water	Hamilton Reservoir
Water	Willimansett Brook
Water	Bircham Bend Brook
Water	Elbow Brook
Water	Potash Brook
Water	Mill River
Water	Gate Brook
Water	Quabaug River
Water	Westfield River
Water	Chicopee River

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

August 28, 1942

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

An inspection of all the dams in Hampden County, with regard to their condition and safety, as provided by Chapter 253 of the General Laws has recently been completed.

As in past inspections, it was found that a few of the structures show a need for repairs, although these repairs are, for the most part, of simple character.

Each dam on which repairs are needed, is listed below, together with its condition, and it is recommended that the attention of the owners of these structures be drawn by the Board to the advisability of making such repairs.

BRIMFIELD
Mrs. F. R. Humpage Dam
on Elbow Brook

The pondage at this dam has been drawn off and the smaller of the two drain pipes in the base of the dam is kept open so that the flow of the brook may pass through without filling the pond. Because of the possibility of this small pipe becoming plugged with silt, debris, etc., it is recommended that the larger drain pipe through the dam should also be kept open.

CHICOPEE
Fairview Sportsmen's Fish & Game
Assoc. Dam on Willimansett Brook

The concrete overflow structure which extends through the middle of this earth dam is showing some erosion and disintegration in the light, reinforced concrete side walls. It is recommended that the owner be notified to repair this overflow in a substantial manner before the end of the present year.

CHICOPEE
City of Chicopee Park Department Dam
On Dingle Brook (Old Bemis Dam)

At two places along the top of this dam, the earth fill on the upstream slope has been eroded or worn away, leaving trenches or holes. These trenches should be filled with earth to the level of the surface of the dam.

CHICOPEE
Hampden Bleachery Co. Dam
On Tributary of Chicopee River

The pond formed by this dam has been drawn down to a level of some 4 feet below the overflow. Before this pond is allowed to re-fill, the concrete overflow channel and the concrete facing wall of the dam should be repaired.

HOLLAND
James E. Rorabaugh Lower Dam
on Tributary of Hamilton Res.

The overflow of this dam consists of a plank sluice about 6 ft. in width extending across the top of the dam. The sidewalls of the sluice should be raised to a height of about a foot in order to prevent erosion of the earth fill along the edges of the overflow.

PALMER
Central Mass. Electric Company Dam
on Quabaug River

There is some leakage coming through this timber dam at a point adjacent to the northerly stone abutment. While this leakage may not be of much consequence in a dam of this type, nevertheless, it is recommended that the attention of the owner be drawn to this leakage.

PALMER
Palmer Town Farm Dam
On Tributary of Gate Brook

The floor and walls of the overflow of this dam are broken up and in need of repairs, providing the structure is to be kept in service.

RUSSELL
Strathmore Co. Fire Protection Dam
On Potash Brook

In the concrete wall or dike which extends from the dam westerly along the highway, there are several places where the concrete is broken, leaking, and in need of repairs.

SPRINGFIELD
Edward Fitzgerald Dams
On Bircham Bend Brook

At the lower dam, the approach to the overflow is partially obstructed by a heavy growth of weeds and brush which should be removed.

At the upper dam, repairs are needed at the upstream end of the northerly overflow channel wall, where the wall has been weakened by erosion of the concrete at the water level.

WEST SPRINGFIELD
Morgan Worthy Estate Dam
On Westfield River
(Leased by the Worthy Paper Company)

In August of 1940, the County Commissioners called attention of the Worthy Paper Company to the need for repairs on this timber dam. These repairs have not been made, however, and as it appears that this dam is a part of the Estate of Morgan Worthy, deceased, and that there may be some question as to responsibility for maintenance of the structure, it is recommended that the County notify Mr. Alfred Leeds, administrator of the Estate of the need for such repairs, and that a copy of this notification be sent to William V. Baldwin, attorney for the Estate, and to the Worthy Paper Company.

WILBRAHAM
Victor Gengreau Dam
On South Branch, Mill River

There is some leakage showing through the earth and rock fill of this dam adjoining the northerly end of the spillway. The source of this leakage should be located and the leaks effectively stopped before damage is done to the structure.

WILBRAHAM
James F. Powers Dam
On South Branch, Mill River

Last year the County Commissioners recommended that repairs should be made upon the concrete facing wall of this dam and around the overflow. Instead of making such repairs and keeping the dam in service, however, the owner decided to draw off the pond and leave the drain pipe in the base of the dam open so that no pondage would be formed. Inasmuch as this drain pipe is of small size, and since its entrance might become plugged by silt, debris, etc., especially in times of heavy runoff, it is recommended that, as an additional safeguard, the overflow section of the dam be lowered at least five (5) feet below its present level.

If the owners of these dams are notified in the near future, there will be ample time for making the necessary repairs before winter sets in.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1943 Tighe Report



1943 Reports

Report filed December 31, 1943 by James L. Tighe. Total number of dams is now 366.

Dam	Hampden County
-----	----------------

025 085

REPORT
HAMPDEN COUNTY DAMS
1943

Brought in February 15, 1944.

JAMES L. TIGHE
CONSULTING ENGINEER
189 High Street, Holyoke, Mass.

R E P O R T

H A M P D E N C O U N T Y D A M S

1 9 4 3

JAMES L. TIGHE

CONSULTING ENGINEER

CALEDONIAN BUILDING, 189 HIGH STREET

HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST, MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 31, 1943

The Hon. The Board of County Commissioners
Hampden County
Court House
Springfield, Massachusetts

Thomas J. Costello, Chairman

Dear Sir:

The following report on the dams in
Hampden County for the year 1943 is herewith
submitted.

The total number of dams in the
County, large and small, is 366. Of this num-
ber, 242 form ponds, while the remainder have
free waterways through or around them and,
consequently, form no pondage. Several of
these latter structures formed ice ponds, which
have been going out of service for some years,
because of the change in the ice industry from
natural to artificial ice.

During the year only one new dam was
built. It is located on a small tributary of

the Chicopee Brook in the Town of Monson, and was constructed by Mr. Donald G. White, No. 3 Ely Road, Monson, Massachusetts, on his own property close to his residence, for the purpose of forming a small private swimming pool. The dam is a cement, concrete structure, but, inasmuch, as it is less than 10 feet in height, has a pondage capacity less than 1,000,000 gallons and a drainage area contributory less than a square mile in area, a permit from the County for its construction was not necessary under the statute. Notwithstanding, it was thought advisable to make a record of the dam in this report.

During the year, the usual inspections of all the dams were made in the field. They were found to be in a reasonably fair condition, especially, regarding material repairs, as compared with other years. This, probably, can be attributed to having no abnormally high freshets in the Spring, or at anytime throughout the year.

The repairs proposed to be made and started in 1942 on the Agawam Sportmen's Club dam in Agawam, for the purpose of restoring the

old fish pond there, have not been completed, owing, apparently, to labor shortage. For the same reason, it seems, the repairs proposed and started on the Fletcher dam on Great Brook in the Town of Southwick, for which the plans and specifications were approved by the County in October, 1942, have not been carried out.

No repairs have been made, as yet, on the Worthy Paper Company dam, on the Westfield river, and the proposition appears to be still under consideration. This is the structure about which there was some correspondence with the County, regarding the opening of the gates in the West Springfield end of the dam, by the Town of West Springfield, in order to keep down the pondage while the repairs were being made.

The improvements proposed on the Fairview Sportmen's Club dam on Willimansett Brook in Chicopee, for which the plans and specifications were approved by the County in June, 1943, had been made in accordance with the said plans and specifications.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1944 Tighe Report



1944 Reports

Report filed December 30, 1944 by James L. Tighe. No flooding occurred during this year.

Dam	Hampden County
-----	----------------

d25 086

REPORT
HAMPDEN COUNTY DAMS
1944

JAMES L. TIGHE
CONSULTING ENGINEER
189 High St., Holyoke, Mass.

Revised February 6, 1945

R E P O R T
H A M P D E N C O U N T Y D A M S
1 9 4 4

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

December 30, 1944

The Hon. The Board of County Commissioners
Hampden County
Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

In compliance with your instructions and in accordance with Sec. 45 Chap. 253 of the General Laws, I have during the year examined all the dams in Hampden County, in regard to their safety, and report as follows:

Because of having no unusual high flood flows at any time in 1944, the dams of the County had been found, on the whole, to be in fair condition, and free from any damage caused by washouts etc. common, more or less, to the smaller earthen structures in these years of abnormally high flood flows.

Generally speaking, to this latter class of structure, belongs the ice pond dam, which is gradually going out of use and being abandoned, owing to the changing over of the ice industry from natural to artificial ice.

This abandonment can create a hazardous condition because, when the structure is not looked after and repaired when necessary, its stability will be affected.

It is, therefore, advisable to have a free water-way through such structure, in order that there may be no filling of the pond in flood flow periods, thus subjecting it to a pressure it may not then be able to resist.

The repairs, under consideration for sometime, on the Worthy Paper Co. dam across the Westfield river in West Springfield-Agawam, have not as yet been made, and the proposition appears still to be under consideration by the company.

The repairs on the Fletcher dam, so called, on Great brook in the town of Southwick, for which the plans and specifications were approved in 1942, have not been made, nor have the improvements, started in 1942 on the Agawam Sportsmans Club dam, in the town of Agawam for the purpose of restoring the fish pond there, been completed. It appears war conditions have delayed the proposed work being done.

Some of the other matters attended to relating to the supervision of the dams, were as follows:

An examination of and report on the grading proposed to be done at the Church Mfg. Co. dam on Chicopee brook, in the town of Monson.

An examination and report on the condition of the Mill Lane highway bridge south abutment in the town of Brimfield, said highway being, also, the dam forming

Brown Pond, so called, which supplies water power to the Campbell sawmill.

An examination and report relative to trouble, thought to be caused by water from the Ware river backing up to the house of Mrs. Sophie L. Piper, Bennet Road, Palmer.

A report relative to the danger to life and property in the taking down and removal of the Chicopee Mfg. Co. No. 2 dam, so called, across the Chicopee river in Chicopee Falls.

To the uninitiated it may be interesting to know that, according to the laws of Massachusetts, a dam, which requires the approval of the County Commissioners for its construction, cannot be removed without like approval by the County Commissioners.

It may not be out of place to say here, that the dam in question, was not taken down or disturbed, since arrangements had been made to convey it to the City of Chicopee.

Respectfully submitted,

James L. Tighe

Hampden County Dams Report - 1945



1945 Reports

Report of Hampden County Dams that require repairs by James L. Tighe - September 28, 1945.

City/Town	Palmer
-----------	--------

City/Town	Brimfield
-----------	-----------

City/Town	Blandford
-----------	-----------

City/Town	Southwick
-----------	-----------

City/Town	Blandford
-----------	-----------

City/Town	Monson
-----------	--------

City/Town	Chicopee
-----------	----------

City/Town	Chicopee
-----------	----------

City/Town	Hampden
-----------	---------

City/Town	Westfield
-----------	-----------

City/Town	Agawam
-----------	--------

Dam	Zerra Ice Pond Dam
-----	--------------------

Dam	Peck Lumber Company Dams
-----	--------------------------

Dam	North Pond Dam
-----	----------------

Dam	Fowler Ice Pond Dam
-----	---------------------

Dam	Central Massachusetts Electric Company Dam
-----	--

Dam	Creeger-Cass Dam
-----	------------------

Dam	Downs Dam
-----	-----------

Dam	Chapman Dam
Dam	Wyszatycki Dam
Dam	Textile Printing Company Dam
Dam	Chicopee Manufacturing Corporation Dam
Dam	Labonte Dam
Dam	Fairview Sportsmen F & G Club Dam
Dam	Saloomey Dam
Dam	Moulton Dam
Dam	Mace Dam
Water	Swift River
Water	Twelve Mile Brook
Water	Ware River
Water	Scantic River
Water	Potash Brook
Water	Wheeler Brook
Water	Long Pond
Water	Blodgett Mill Brook
Water	Mill River
Water	Crowfoot Brook
Water	Hearthstone Quarry Brook
Water	Willimansett Brook
Water	Great Brook

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 5525

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

September 28, 1945

The Hon. The Board of County Commissioners
Hampden County, Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

As a result of my inspection, now completed, of the Hampden County dams, regarding their condition and safety, I recommend that the owners of the structures, referred to below, be notified by the Board relative to repairs needed, and the removal of obstructions caused by entangling drift-wood, debris etc. accumulating in spillway and overflow approaches and discharge channels.

AGAWAM

Salvatore Zerra Ice Pond Dam
Located On The Headwaters
Of The Agawam Co. Brook.

It is recommended that the emergency overflow swale, so called, connected to this earthen structure have the long grass and shrubbery growing therein, cut and removed therefrom.

BLANDFORD

Ralf N. Fowler Ice Pond Dam
Located On A Small Tributary
Of Potash Brook

Because of the low height of this dam, the small pondage formed thereby and the small drainage area contributory thereto, this structure may not come under the statutory limits established for the supervision of dams. Nevertheless, as a matter of information, I would recommend that the owner be advised of a leakage at the south end of the structure, which needs repairing, if the ice pond is to be maintained.

BLANDFORD

Peck Lumber Co. Dam No. 1
Located on Wheeler Brook
Formerly Owned by Albert Gibbs

The drift-wood and debris in front of
and blocking up the spillway of this
No. 1 structure, should be removed.

BLANDFORD

Peck Lumber Co. Dam No. 2
Located On The Outlet Of Long Pond
Formerly Owned By Mrs. E. K. Lincoln

The down stream masonry wall of the
west abutment of this No. 2 structure
and the earth-fill behind wall need
repairs.

BRIMFIELD

William C. Moulton Upper Dam
Located On Blodgett Mill Brook
Formerly Owned By The Brimfield Brick Co.

The plank lining of the drain gate channel
and the wood framework of the old drain gate
are, through decay, etc; falling out of place
into the channel bed, thus, obstructing the
flow of water therein. This planking and
all debris connected therewith, should be
removed and the channel put in proper
condition for the free discharge of water.

CHICOPEE

Leo Wyszatycki Dam No. 1
Formerly John Wyszatycki Estate
Dam No. 1, or North Pond Dam
Located on Crowfoot Brook

The cobble stone etc. dumped into the
emergency swale overflow of this structure,
should be removed and the swale returned to
its original efficiency.

CHICOPEE
Chicopee Mfg. Corp.
Hearthstone Quarry Brook
Process Water Dam

In regard to this structure the bottom of the reinforced concrete overflow channel, which is carried on iron pipe supports, has become disrupted, thus causing leakage and the washing away of the earthfill under the channel.

CHICOPEE
Fairview Sportsmen F. & G. Club Dam
Located On Willimansett Brook

The erosion of the natural ground at the downstream end of the concrete spillway of this structure, caused by the discharging water should be repaired.

HAMPDEN
Thomas F. Downs Lower Dam
Formerly Owned By Kellog Farms Inc.
Located On Tributary
Of The South Branch Of Mill River

The overflow channel of this structure is not in good condition and needs repairs.

HAMPDEN
Mrs. C. H. Chapman
Auxiliary Overflow Concrete Structure
Formerly Owned By Anna Carmody
Located On Scantic Brook

This auxiliary concrete overflow structure has a washout at its west end, which should be repaired.

HAMPDEN

E. Labonte Dam

Formerly Owned By H. Earl Kimball

Located On Scantic River

There is some leakage in this stone masonry structure between its center and west end at points some 5 or 6 feet below its crest, which need repairing.

MONSON

Dr. C. H. Mace Dam

Formerly S. M. Green Dam No. 4

Located On 12 Mile Brook

There is a leakage in this dry stone masonry structure, near its north abutment, apparently at a point about 3 feet below its crest, which should be repaired.

PALMER

Textile Printing Co. Upper Dam

Formerly Owned By Boston Duck Co.

Located On Swift River

At the down stream end of the northern abutment of this stone masonry structure a couple, or so, of the large facing stones have fallen into the streambed. Those stones should be re-set in place or the space they occupied filled with concrete.

PALMER

Central Mass. Electric Co. Dam

Located on the Ware River

The leakage showing at the north end of this log crib spillway structure needs attention and should be repaired.

SOUTHWICK
Creeger-Cass Dam
Formerly Creeger-Farant Dam
Located On Tributary Of Great Brook

The free discharge of water over the spillway of this earthen structure is obstructed with entangling drift-wood, debris, etc. which should be removed.

WESTFIELD
S. S. Sallomey Dam
Located On Great Brook

Although some repairs have been made on this deck spillway structure, considerable repairs are still needed before the structure is in proper condition.

Respectfully submitted,

James L. Tighe

September 28, 1945

Report of Inspection
of all Hampden County
Dams and recommenda-
tion of Engineer that owners
of structures be notified
relative to repairs needed.

Hampden County Dams 1945 Tighe Report



1945 Reports

Report filed February 21, 1946 by James L. Tighe. All dams were inspected.

Dam	Hampden County
-----	----------------

REPORT
HAMPDEN COUNTY DAMS
1945

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

JAMES L. TIGHE

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.

TELEPHONE 8528

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

February 21, 1946

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Thomas J. Costello, Chairman,

Dear Sir:

During the year 1945 all the dams in Hampden County, forming ponds, were inspected by your Engineer relative to their condition and safety. Abandoned structures were also inspected, in order to see that their free water ways were being maintained.

Of the dams in use forming ponds, there were sixteen (16) found needing attention. These were reported to the County Commissioners, who notified and advised each owner as to the condition of his structure, and the repairs etc. needed thereon. Besides such notification, where convenient to the owner, your Engineer met him at the dam, and explained to him what had to be done to put the structure in a safe condition.

The locations of these sixteen (16) dams, already reported in detail, are as follows: one (1) in Agawam, three (3) in Blandford; one (1) in Brimfield; three (3) in Chicopee; three (3) in Hampden, one (1) in Monson; two (2) in Palmer; one (1) in Southwick and one (1) in Westfield.

There were no new dams built during the year, although, plans and specifications were filed and approved on May 9th, for the re-building of the old Pratt Anglers Club, dam, so called, located on the north branch of Mill River in Springfield. Apparently, owing to the scarcity of labor and material, the doing of the work was postponed. For the same reason, it appears, the improvements in the old Fletcher dam, so called, in Southwick, for which the plans and specifications were approved in Oct. 1942, have not as yet been made.

In regard to the repairs needed on the Worthy Paper Co. dam, so called, across the Westfield River, between Agawam and West Springfield, to which the attention of the Worthy Paper Co. was drawn sometime ago, no repairs, so far, have been made on the structure. The Worthy Paper Co. states that it is not the owner of the dam, but a lessee in perpetuity, paying an annual rental therefor and, that the owner is the Worthy estate.

The river screening equipment proposed by the United States Rubber Co. to be located on the East bank of the Chicopee River at its Fisk Tire Plant in Chicopee Falls, and for which the plans and specifications were approved in May last, has been constructed and in use since October last.

Conferences were held with members of the Ludlow Camp Alben Association Incorporated Club, relative to the

forming of a pleasure pond by the re-building of the old abandoned Alden Bro's. sawmill dam, located on Broad Brook in Ludlow, but, as yet, plans and specifications for the doing of the work have not been filed.

At the request of Dr. Makashian of Ludlow an investigation was made in regard to the re-building of an old derelict structure, located near the Belchertown Road on a tributary of Higher Brook, which runs through the Doctor's farm in Ludlow; the point in view, being the forming of a private pleasure pond. So far, however, no plans and specifications have been filed for the doing of the work.

Likewise, at the request, of Dr. Edelman of Agawam, representing the Mawaga Sporting Club, the old abandoned Harvey Porter dam, so called, located on Tarkill Brook in Agawam, was investigated, in view of having the structure overhauled and put in good condition. The matter was further investigated and considered with Mr. Robert E. Alcorn, the Engineer, acting for the Mawaga Club, with the result, that plans and specifications for the doing of the work, were filed for approval on Dec. 29th, 1945.

The old dam forming Vinica pond in Wales, and purchased by Mr. Arthur D. Norcross, for recreational and wild life conservation purposes, for which three (3) dams have already been built, was examined in view of over hauling the structure and putting it in good condition this present year.

The dam across the Chicopee River at Chicopee Falls, belonging to the Chicopee Mfg. Corporation, was sold to the City of Chicopee and the canal therefrom for conveying water to the mill water wheels, has been filled in with earth material.

The radial brick stack, 125 feet in height, belonging to the Monsanto Chemical Co. had been felled on Dec. 9th last. It was located on the South bank of the Chicopee River, at the Plastic Division of the Company, about 90 feet from the water edge. Inasmuch, as the felling of this stack would cause 30 feet or thereabouts of its top to drop into the river-bed, the Monsanto Co. brought the matter to the attention of the County. After investigation your Engineer reported that in his opinion the felling of the stack, notwithstanding, that thirty feet of its top would land in the river-bed, any wave action caused thereby, would not he thought, affect the safety of the dams upstream and downstream from the felled stack.

Two formal complaints were made in regard to damages being done to properties abutting ponds, caused by the raising of the pond waters, by obstructions placed in their spillways which, in one of the cases, at least, was done in the interests of fishermen.

One of these complaints was from an abutter of Hampton ponds in Westfield, and the other from an abutter of Shawville pond in Wales. After these obstructions were removed there were no further complaints about damages being done by high water.

Respectfully submitted,

James L. Tighe

Hampden County Dams 1946 Tighe Report



1946 Reports

Report filed April 28, 1947 by Philip E. Bond of Tighe & Bond, with the consent of the county commissioners. James L. Tighe died on April 6, 1947. Total number of dams is 368 at this time.

Dam	Hampden County
-----	----------------

025088

R E P O R T
HAMPDEN COUNTY DAMS
1946

Received April 28, 1947.

REPORT
HAMPDEN COUNTY DAMS
1946

Received April 28, 1947.

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

April 23, 1947

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts
Charles W. Bray, Chairman

Dear Sir:

In accordance with Section 45, Chapter 253 of the General Laws, the following report for the year 1946, relative to the dams of Hampden County is herein submitted:

All the dams, large and small, numbering 368 in all as inspected, were found comparatively speaking to be in fair condition from the standpoint of safety.

Freshets often seriously affect dams even those having high margins of safety. Because of the low flood flows and especially low spring freshets in 1946, there was no serious damage done to any of the structures in the past year. Of the total number of dams inspected, about 30 per cent of them belong to the smaller class of structures which down through the years have gone out of service. This is especially true of ice ponds which have been superseded by artificial ice plants in recent years. These discontinued structures now have free water-ways through or around them and therefore do not form pondage.

Notwithstanding, such structures have to be inspected, since they are generally forgotten by their owners

and their free water-ways allowed to become blocked up with sand and gravel, shrubbery, growths and debris of all kind, thus again forming pondage and becoming a real hazard, especially in high flood flow which might cause a washout and thus endanger structures downstream. Such dams are kept under observation at all times, as well as those in continual service.

Plans and specifications for the construction or reconstruction of three dams were approved by the County during the year, namely: The Mawaga Sporting Club for the repairing of the old Porter Dam, so-called, located on Tar-kill Brook in Agawam on March 27, 1946; the Camp Alden Association Inc. for the reconstruction of the old Alden Pond Dam in the Town of Ludlow on March 27, 1946; and by the Springfield Young Men's Hebrew Association for the construction of an earthen dam on the southwest branch of the Mill River in Wilbraham on July 17, 1946.

The construction of the Alden Dam and the Young Men's Hebrew Association Dam have been completed. The dams are now ready for final inspection for approval.

The work on the Mawaga Sporting Club Dam has been delayed. Changes in the plans and specifications are contemplated by the owner.

The owner of only one dam, the Trout Pond Dam on the Tunxis Estates in Tolland, had to be notified in 1946 of the need for repairs. Conferences were held with the owners of the Kellogg Lower Dam in Wilbraham and the Anderson

Dam on the Farmington River in Tolland relative to repairs to be made thereon. The repairs on these two latter dams were made voluntarily by the owners, no notice having been sent them.

Investigation was made of the Mrs. Brooke Shughnessy Dam in Granville. This dam was found to be small, less than 10 feet in height, having a pondage capacity of less than a million gallons and a drainage area contributing less than a square mile. A permit from the County for the construction was not necessary under the statute.

Two formal complaints were made, one relative to obstructions built across the overflow stream bed of 9-Mile Pond and the other, relative to the closing off of water-ways at Congamond Lakes. Investigation of these complaints showed no County jurisdiction.

In the fall of 1946, Mr. James L. Tighe because of illness was unable to do the active field work, and under his direction and control, the work was carried on by Mr. Philip E. Bond who also assisted in completing the records for the year 1946. Mr. Tighe undertook the writing of this report which upon his death on April 6, 1947 was completed by his associate, with the consent of the County Commissioners.

Respectfully submitted,

TIGHE & BOND

By

Philip E. Bond



Hampden County Dams 1947 Tighe Report



1947 Reports

Report filed April 16, 1948 by Philip E. Bond. No flooding during this period.

Dam	Hampden County
-----	----------------

025 089

R E P O R T
HAMPDEN COUNTY DAMS
1947

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

April 16, 1948

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Charles W. Bray, Chairman

Dear Sir:

In accordance with Section 45, Chapter 253 of the General Laws, the following report for the year 1947 relative to the dams of Hampden County is herein submitted:

All the dams forming ponds were inspected by your Engineer relative to their condition and safety, abandoned structures were also inspected in order to see that their free waterways were being maintained. Because there was no unusual high flood flow at any time in 1947, the dams of the County were found on the whole to be in ^{good} ~~fair~~ condition. Of the dams in use forming ponds, there were 15 found needing attention; 13 of these 15 required minor repairs due to lack of maintenance, however, 2 dams were found with inadequate spillways and needing immediate alterations to prevent possible failure during the 1948 spring freshets.

The dams needing repairs were reported to the County Commissioners to notify and advise each owner as to the condition of the structure and the repairs needed thereon. In the case of the 2 structures needing immediate alterations to their spillways, the owners were notified and requested to appear

The Hon. The Board of County Commissioners
Springfield, Massachusetts

April 16, 1948

- 2 -

before the County Commissioners and report their proposed action thereon.

Plans and specifications of 2 dams were approved by the County during the year, namely:

The Quinnehtuk Co. was given approval to increase the height of the temporary flashboards on the Dwight Dam on the Chicopee River in the City of Chicopee, maximum height of the flashboards to be 28 inches above the permanent crest of the dam.

Dr. E. M. Sullivan of Chicopee filed plans for the construction of an earthen dam on Twelve Mile Brook in the Town of Wilbraham and the construction of this dam was approved by the County. The work of constructing the Sullivan Dam has been delayed.

The Mawaga Sporting Club, who filed plans, in 1946, for the reconstruction of the Old Porter Dam, so-called, located on Tarkill Brook in Agawam, completed its reconstruction in 1947, however, they have installed fish screens at the spillway and the construction cannot be approved with the screens in place until an emergency swale type of overflow is constructed.

Conferences were held with Mr. Albert H. Wilgus relative to the reconstruction of the Old Log Crib Dam on Ashley Brook in Westfield.

The Hon. The Board of County Commissioners
Springfield, Massachusetts

April 16, 1948

- 3 -

The complaint of Frederick Holcomb of Bondsville relative to the elevation of the spillway of the Midura Dam was investigated and conferences were held with Mr. Midura and Mr. Holcomb. The investigation of this complaint showed no County jurisdiction.

Conferences were held and locations inspected to assist owners at various locations in the County who proposed to construct small dams; which on examination were found outside the County's jurisdiction.

Respectfully submitted,

Philip E. Bond
County Hydraulic Engineer

Hampden County Dam Inspections by Tighe & Bond - 1950 - 1951.



1950 Reports

Correspondence from Tighe & Bond from 1950 - 1951.

Dam

Hampden County

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 3, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in the Towns of Hampden, East Longmeadow and Longmeadow, and in the City of Springfield, and find that the following dams require certain maintenance and repairs:

✓ A. The Sazama Dam in Hampden: The earth fill section of the dam is overgrown with trees and brush, and should be cleared.

✓ B. The Rockwel Dam in Hampden: There is leakage through and under the drawoff gate structure, along the outside of the drawoff pipe, and through the rocks at the base of the dam on the northerly end. These leaks should be investigated and repaired.

✓ C. The Kibbe Dam in Hampden: The wooden flume spillway has deteriorated, and should be repaired or replaced. There is some leakage under the dam which should be investigated.

✓ D. The Van Horn Park Upper Dam; Springfield Park Department in Springfield: The overflow pipe from the pond appears to be plugged, and should be cleaned.

✓ E. The Wetstone Tobacco Company Dams in East Longmeadow:
The Wetstone Tobacco Company have two dams on their property located westerly of Shaker Road and just northerly of the Connecticut State Line. One dam is on Freshwater Brook at a point about 2000 feet upstream from Crescent Lake; a fairly large body of water within Connecticut. This dam has been in existence for some time. The second dam, built during the past two years, is on Jawbuck Brook at a point about 1000 feet upstream from Shaker Road; another fairly large body of water within Connecticut. These dams were located during our recent inspection of the East Longmeadow area, and it has been determined that both of them should come under County jurisdiction. Failure of either dam should cause little damage, however, since both the lake and pond downstream in Connecticut are large, and each should be able to absorb the excess water, while the valley of each brook between appears to be undeveloped and uninhabited.

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

- 2 -

The Hon. The Board of County Commissioners
Springfield, Mass.

10/3/50

The dam on Freshwater Brook is an earth dam forming a pond which is used for irrigation purposes. The dam is about 200 feet long, 8 feet in height, and has a top width of 10 feet. The main spillway consists of two 18-inch corrugated iron culvert pipes laid through the earthfill dam. These pipes pitch upward from the pond, so that the lower or upstream end of each pipe is submerged at all times. The invert of the discharge end of each pipe thus becomes the crest of the spillway. There is a swale spillway on the easterly end of the dam. The area of the pond is slightly more than two acres, while the volume is estimated at about 1½ million gallons when filled to the crest of the pipe spillway. The drainage area above the dam is approximately 1 square mile.

The second dam located on Jawbuck Brook is an earth dam forming a pond to be used for irrigation purposes. The dam is about 420 feet in length, 8 feet in height, and has a minimum top width of 15 feet. The spillway consists of two 18-inch corrugated iron pipes located about 100 feet easterly of the west embankment. These spillway pipes have been installed in the same manner as the pipes in Freshwater Brook Dam. There is no swale spillway on Jawbuck Brook Dam. The pond area is approximately 3 acres, and the volume is estimated at about 2 million gallons, when filled to spillway crest. The drainage area above the dam is slightly less than 1 square mile. The following work should be done on these dams:

Freshwater Brook Dam: The swale spillway on the easterly end of the dam should be brushed and cleaned. The spillway pipes should be examined carefully from time to time to be certain that they are not deteriorating and in danger of rupture. These pipelines, because of the way they are laid through the dam, contain water under pressure, and thus, might cause a failure of the dam if they ruptured.

Jawbuck Brook Dam: A swale spillway should be constructed on natural soil. The corrugated plate flume at the end of the spillway pipes will eventually deteriorate and fail, with the result that a washout might occur at the toe of the dam. This condition should be remedied by the installation of a more permanently constructed spillway flume.

Respectfully submitted,

By


G. H. McDonnell

County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 16, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in Chicopee, Holyoke, West Springfield, and Agawam, and find that the following dams require certain maintenance and repairs:

✓ A. The City of Chicopee Park Department dam on Bemis Pond: Gullies have been washed and worn on both faces and top of the earth section of the dam, and these should be filled and properly graded. Fill should be placed to bring the top of the dam to its proper elevation on either side of the spillway. The upstream concrete spillway wing wall needs repairing. Steel reinforcing is exposed.

✓ B. The Dwight dam on Chicopee River: There is some leakage through the stonework at the center of the face of the canal spillway about 6 feet down from the spillway crest. This condition is not serious but should be called to the owner's attention.

✓ C. The J. Stevens Arms Company process water dam in Chicopee: The entrance to the well chamber of the overflow pipe is plugged with debris and should be cleaned.

D. City of Chicopee Dam on the Chicopee River at Chicopee Falls: None of the repairs previously recommended have been completed to date. The undersigned plans to confer with the City Engineer on proposed work at this dam.

✓ E. H. T. Messer dam in Chicopee: The end of the spillway channel has been partly washed out and repairs are necessary to prevent further damage to the structure.

✓ F. S. Wyszatzcki dams in Chicopee: Brush and tree growth on both dams should be removed.

✓ G. Sullivan dams in Chicopee: The Sullivan dams are located easterly of the Red Barn Restaurant on Montgomery Street in Chicopee Falls. One dam is located directly above the other and both have a drainage area of approximately 1/4 square mile. The lower dam has a spillway pipe fourteen inches in diameter

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

- 2 -

The Hon. The Board of County Commissioners
Springfield, Mass.

10/16/50

and a 2-foot freeboard. The capacity of the spillway is inadequate for the drainage area, and should be increased. Water from the spillway pipe discharges on brick and debris at the base of the dam, and care should be taken to see that this area is not washed out by the spillway discharge. The upper dam is located directly above the lower dam and has an 18-inch concrete pipe spillway through the dam. The capacity of this spillway pipe is inadequate and should be increased. A screen over the inlet end of the pipe restricts the flow through the pipe, and should be removed. There is evidence of fill being washed from the dam on the outside of the spillway pipe on the downstream side of the dam. This condition should be investigated and any leakage stopped.

✓ H. Peter Fossa dam in West Springfield: The emergency overflow pipe is approximately one-half plugged with traprock chips at its inlet end, and should be cleaned.

✓ I. The Park and Playground Commission dam at Mittineague Park in West Springfield: Stop planks and flash boards are set in the dam to an elevation approximately equal to the top of the abutments. It is evident that the overflow has been passing over the abutments and some of the soil downstream has been washed out. Continuation of this practise may eventually cause damage to the structure. If the flash boards are to be maintained, protective work should be done downstream from the dam abutments.

✓ J. Strathmore Paper Company dam on Westfield River at West Springfield: There is increased leakage along the base of the dam. There is little or no danger of the dam being suddenly destroyed by an increase in this leakage, however, the condition should be called to the owner's attention.

Respectfully submitted,

By 
G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 31, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in Southwick and a part of the dams in Westfield, and finds that the following dams require certain maintenance and repairs:

✓ A. Pieczarka Dam in Southwick: The concrete and stone-work has disintegrated at numerous places and there is leakage under and through the dam.

/ B. Westfield Girl Scouts Dam in Westfield: When flashboards are in place and the water level of the pond raised, some water flows around the northwesterly end of the dam. Sand bags and rip rap, together with a baffle plate, have been placed on the end of the dam to protect the natural sand embankment from being washed. Additional protection to keep the sand from being washed away from the roots of trees in the embankment seems advisable. Rip rap or cloth bags filled with a dry sand-cement mixture and then laid in place and wet down, would provide good protection. There is little danger of losing the pond and then only at a time of high stream flow when the flashboards are in place. A washout around the dam would not damage persons and property downstream, since the pond formed is small and the dam low, but once washed out, the cost for repairs might be quite high. This condition should be called to the attention of the Owner so that action may be taken if they so desire.

Respectfully submitted,

By G. H. McDonnell
G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

August 23, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has inspected all of the dams in the Towns of Holland, Wales and Brimfield, and find that the following dams require certain maintenance and repairs:

✓ A. The Rorabaugh lower dam in Holland: There is a leak located ten feet easterly of the spillway. Gravel should be placed behind the concrete wall of the dam for a distance of at least ten feet either side of the location of the leak.

✓ B. The W. B. Cheney Dam in Brimfield: Some leakage was noted at the base of the stonefill north of the old mill site. This leakage should be watched and if it increases, steps should be taken to stop it. The spillway was found to be plugged with boulders and humus, and should be cleaned.

✓ C. The Woodman Pond (Massachusetts Department of Conservation) in Brimfield: A leak was noticed through the spillway section in the vicinity of the drawoff pipe. The leakage flows from the stone structure of the spillway around the outside of the draw-off pipe. The leakage should be investigated. Logs in the auxiliary spillway should be removed.

All other dams in the Towns of Holland, Wales and Brimfield were found to be in a satisfactory condition.

Respectfully submitted,

By


G. H. McDonnell

County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 18, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting and checking all of the dams in the Towns of Brimfield and Monson, and find that the following dams require certain maintenance and repairs:

A. The Maple Lake Dam in Brimfield: There is a leak beside the drawoff pipe, and the surface of the gravel fill at the abutment above the drawoff pipe has settled. The leak appears to be washing sand and gravel from the abutment area. The pond should be drawn down and the leak investigated and repaired.

B. The R. B. Pierce Dam in Brimfield: No pond is formed by this dam. The flow of the stream goes through the dam at about the center section where the pipes through the dam are located. Rupture on the side of one pipe allows entry of the brook for passage of water through the dam in the pipe. Pipeline gates, now closed or blocked, should be fully opened or the dam should be breached or properly repaired.

C. The Monson Water Works Dam in Monson: The drawoff pipe has been sealed on its downstream side by a steel plate fastened to the pipe outlet. Full hydrostatic head is now on the drawoff pipe through the dam. Proper repairs to the drawoff gate and pipeline on the upstream side of the dam should be made immediately, and the steel plate covering the discharge end of the pipe should be removed.

D. The Springfield Sportmen's Dam in Monson: There is a leak at the base of the dam east of the spillway. The swale spillway is choked with brush and must be cleaned out. Fish screens in place on the spillway and swale must be removed during the winter and should not be replaced until after the spring runoff.

E. The Ellis Mills Upper Dam in Monson: There is a small leak or discharge from the base of the dam at the westerly end. This water may be water from the spillway running back into the stone of the spillway and then emerging at the base of the dam. The source of this apparent leakage should be investigated.

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

- 2 -

The Hon. The Board of County Commissioners
Springfield, Massachusetts

9/18/50

F. The Anderson Dam in Monson: The swale spillway on the end of the dam nearest the house, has been eliminated. A new swale spillway appears to have been cleared on the southerly end of the dam. The crest of this new swale should be lowered to provide adequate freeboard on the dam.

G. The A. E. Goudreau Dam in Monson: The swale spillway on the southerly end of the dam has been bridged, and two 18-inch corrugated iron culvert pipes installed. These culvert pipes greatly restrict the capacity of the swale spillway. The full cross-sectional area of the spillway channel should be maintained. The culvert should be removed and replaced with a bridge, or a new swale spillway provided.

H. The Pulpit Rock Pond Lower Dam in Monson: The small sloping concrete trough spillway at the most northerly end of the pond has disintegrated, and is leaking badly along the sides and the base. This spillway should be repaired.

Respectfully submitted,

By


G. H. McDonnell

County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 22, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting and checking all of the dams in the Towns of Palmer, Ludlow, and Wilbraham, and find that the following dams require certain maintenance and repairs:

A. The Palmer Ice Company Dam in Palmer: The concrete spillway box is full of debris and the spillway pipe is partly blocked. They must be cleaned out. Gravel should be brought in to fill the sunken areas of the dam fill.

B. The Forest Lake Dam in Palmer: There is leakage through the northerly abutment stones. Trees are growing from the abutment area and should be removed. The roots of the trees are separating the stones and are probably the major cause of the leakage. Removal of the trees and stoppage of the leakage should be done immediately.

C. The Ackerman Dams in Ludlow: There is a concentrated leak in the vicinity of the base of the lower dam at the old mill wall corner. This leak should be investigated and stopped, if found dangerous. Two large elm trees growing in the dam fill should be removed.

The upper dam should be cleaned of all brush.

Respectfully submitted,

By


G. H. McDonnell

County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

November 20, 1950

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: Thomas F. Sullivan, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in the City of Westfield and the Towns of Granville and Chester, as well as some of the dams in the Towns of Russell and Blandford and find that the following dams require certain maintenance and repairs:

A. Chapin Pond Dam, south of Hampton Ponds in Westfield:
A large log has become lodged in the spillway approach channel and should be removed. The drawoff pipe has a wooden plug driven in the discharge end and the pipe is now under full hydrostatic head. Leakage from the drawoff pipe could cause the loss of the dam. The gate on the upstream end of the drawoff pipe should be replaced or repaired so that it will close properly, and the plug should be removed from the discharge end of the drawoff pipe.

B. Boy Scouts of America Dam on a Tributary to Great Brook in Westfield: Flashboards are still in place on the spillway and should be removed until after the spring runoff.

C. City of Westfield Water Department Dam at Granville Reservoir: The concrete in the spillway channel has become disintegrated at many places along its length, and repairs should be made to the floor and both walls of the channel during the coming year.

D. City of Westfield, Water Department, Wells Mills Dam on Hollister Brook in Granville: The top of the dam is overgrown with brush which should be cut down. There is a leak on either side of the spillway channel. Water was seen passing thru the stone side walls of the spillway channel. Sunken areas along the spillway channel indicate that fill from the dam may have been worked thru by the leaks. The leaks should be investigated and stopped.

E. City of Westfield, Water Department, Strong Dam (lower dam) on Hollister Brook in Granville: Young trees growing from downstream face of masonry work should be removed.

F. Noble Dam on Tributary to Japhet Brook in Granville: The pond and dam appears to be abandoned. Little or no pond formed at day of inspection. Debris in pond back of dam should be cleaned out or dam breached. Debris could clog spillway and result in over-topping the dam during heavy runoff.

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

- 2 -

The Hon. The Board of County Comm'rs.
Springfield, Mass.

11/20/50

G. Noble, Cooley Drum Shop Lower Dam in Granville: The spillway flume downstream from the conduit under the road has deteriorated and should be replaced. Consideration could be given to the placing of rip rap and grout.

H. Degano Dam in Granville: There is a leak in the spillway conduit under the shoulder of the road on the northerly side of the conduit and just below the spillway proper. This leak should be checked occasionally and if it increases in volume or the road shoulder settles, the leak should be plugged.

I. H. E. Newell Dam on Kinney Brook in Chester: The concrete apron or footing downstream from the notch overflow is being eroded and should be watched for excessive destruction of concrete in 1951. Repairs to the concrete will probably be necessary within the next year.

J. Huntington Fire District Dam in Blandford: The depression on the downstream face of the earth fill beside west spillway wall should be filled and brought to proper grade.

K. Gidd Dam in Blandford: The dam is in a dilapidated state and it should be repaired or breached immediately.

L. Lincoln Dam on Long Pond in Blandford: A leak along the blowoff pipe should be investigated. The earth fill should be brought to grade along the spillway wing walls and a white birch growing at the northwest corner of the spillway wall should be cut down.

Respectfully submitted,

By G. H. McDonnell
G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

July 23, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in Southwick, Agawam and West Springfield, and finds that the following dams require certain maintenance and repairs:

✓ A. P. Korsen Dam (lower) in Agawam: Brush has grown over most of the dam. This brush should be cut and the dam properly maintained.

✓ B. Silver Lake Dam in Agawam: The drawoff gate at the dam is not operating properly. The operating mechanism should be altered so that this gate may be opened and closed when necessary.

✓ C. Mittineague Park Dam (upper) at West Springfield: Erosion is taking place under the paved cobble toe of the downstream apron. Repairs would be advisable before additional damage is done to the apron.

✓ Mittineague Park Dam (lower) at West Springfield: Stop planks and flash boards are set in the dam to an elevation approximately equal to the top of the abutment. It would be advisable to remove at least one and preferably two of these boards, in order to concentrate the overflow in the stream bed area. If the flash boards are to be maintained at their present height, protective work should be done downstream from the dam abutment.

D. Upper Water Works Dam, Paucatuck Brook, West Springfield: This dam is becoming delapidated and a washout around the easterly end might occur during extreme overflow conditions. The dam should also be cleared of brush.

Respectfully submitted,

By G. H. McDonnell
G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

August 13, 1951

Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has reinspected the Richmond Dam in Tolland and finds that the spillway construction has been completed in accordance with the plans and specifications approved by your Board. The major portion of the work on the spillway had been completed some time ago, but the planking installed by the Contractor was 2-inch where the plans called for 3-inch. The Contractor notified the undersigned that the 2-inch planking had been removed and replaced with 3-inch planking. An inspection of the spillway shows that the planking has been changed to 3-inch and the spillway is satisfactory. I recommend to your Board the acceptance of this spillway.

During the past year a leak was discovered under the dam proper. This leakage has been stopped somewhat, but additional work remains to be done by the owner. Since this leak is evidently independent of the spillway construction, it would seem to the undersigned that it should have no bearing on the spillway, and, consequently, acceptance of the spillway can be recommended.

Very truly yours,

By *G. H. McDonnell*
G. H. McDonnell
County Hydraulic Engineer

*Received by
J. H. Bond*

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

August 13, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Attention: William F. Stapleton,
Chairman

Gentlemen:

On June 19, 1951 it was recommended that the freeboard of the dam of the A.R.Z. Corporation in Tolland be maintained at 2 feet, and that the pond should be drawn down to provide this 2-foot freeboard until the dam could be raised at least 2 feet above the spillway level.

The dam was reinspected on June 23, July 3 and August 12, 1951. On neither of these reinspection dates had there been any work done to raise the freeboard, nor had the pond been drawn down to maintain a greater freeboard.

The pond is located at Camp Wynbrooke and it is used for bathing and boating by the campers. I presume that the owners have refrained from drawing down the pond because a lower water level would provide a less desirable shore line. However, the undersigned feels that some concrete action should be taken by the owners, and that they should definitely state, in writing, when construction work can begin and the top of the dam raised. One of the camp owners has promised the undersigned that construction will begin in September. I believe it would be advisable for your Board to notify the A.R.Z. Corporation again of the need for raising their dam, and to instruct them to file plans and specifications of the proposed alterations within the present month, and to begin construction during the month of September at the latest.

Very truly yours,

By 
G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 5, 1951

Miss Neilson
Office of the County Commissioners
Hampden County Court House
Springfield, Massachusetts

Dear Miss Neilson:

Enclosed is a receipt from the State
Department of Public Works for copies of plans
evidently sent to your office by the Highway
Division. This sheet was sent to us but I
believe it belongs in your office.

Very truly yours,

G. H. McDonnell - Eng.
G. H. McDonnell
Hampden County Engineer

*Mr. Maher, City Engr., Holyoke
came in today, Sept. 10, 1951,
& looked over preliminary plans of Northampton,
Chgo. Comm. Stapleton last Friday
instructed Miss Neilson to call Mr. Maher.
Mr. Maher stated he didn't need the plans
but would take them anyway. Mr. Stapleton
was present when Mr. Maher came in 9/10/51*

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 11, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in the Towns of Russell and Montgomery and finds that the following dam requires certain maintenance and repairs:

The Strathmore Paper Company Dam in Woronoco, Russell:
The dike on the easterly end of the dam, constructed following the 1938 flood, should be cleared of all brush and miscellaneous growth.

Respectfully submitted,

By


G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 17, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has completed the inspection of all dams within the City of Holyoke and finds no major repairs required at any of these dams. Minor repairs were needed at two installations and the owners of these dams were present in the field and the work discussed with them at the time of inspection.

Respectfully submitted,


G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 24, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Re: Communication from
West Springfield Water Dept.

Gentlemen:

The Superintendent of the West Springfield Water Department met with the undersigned to discuss the repairs needed at the Department's small dam located in the Town of West Springfield, just southerly of the Holyoke city line and Ashley Reservoir.

The repairs recommended at the West Springfield Water Department's dam are somewhat minor in nature, however, necessary to prevent a washout around the dam should extreme runoff conditions occur.

Since the pond behind the dam is small and shallow, and since the soil around the ends of the dam is extremely well compacted and in its natural state, it would seem that repairs to the structure could be delayed until early Spring of 1952.

Respectfully submitted,


G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

October 24, 1951

William D. Foley, Attorney
Council for the Hampden County Commissioners
County Court House
Springfield, Massachusetts

Dear Sir:

I plan to be in the Hampden-Wilbraham vicinity, for the purpose of inspecting dams, during the week starting October 29, 1951, and at that time will investigate the dam erected by Ralph Carter of Longmeadow in the towns of Hampden and Wilbraham and located to the rear of property of John Moriarty, Glendale Road, Hampden, Mass.

I will submit my report to the County Commissioners and send you a copy immediately upon completing the investigation.

Very truly yours,



G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

November 6, 1951

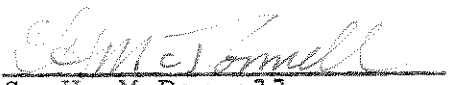
The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

Enclosed, for your information and files, is a copy of a letter sent to Raymond H. Bagg, Chairman of the Board of Selectmen of the Town of West Springfield, in answer to his letter of inquiry written to your Board on October 22, 1951. Also enclosed, in connection with the investigation, is a copy of a letter sent to the Veterans of World War II, Memorial Committee, West Springfield, Mass., Edward C. Peck, Jr., Chairman.

Very truly yours,


G. H. McDonnell
County Hydraulic Engineer

*Referenced to Board
in April 1952*

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

November 6, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in the Towns of Holland and Wales and a portion of the dams in the Town of Brimfield and finds that the following two dams require certain maintenance and repairs:

- ✓ A. The Rorabaugh lower dam in Holland: Leakage under the spillway seems to have decreased. The earth fill of the dam adjacent to the concrete wall has been washed out from directly in front of the concrete wall. This washedout fill should be replaced with well tamped gravel brought up to grade.
- ✓ B. The Rorabaugh upper dam in Holland: This dam is becoming quite delapidated and is leaking through its foundation at the spillway. The structure should either be strengthened and repaired and properly maintained or the water drawn down and the dam breached.

All other dams inspected were found to be in a satisfactory condition.

Respectfully submitted,

By


G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

November 13, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

In accordance with your request, as outlined in the letter from Attorney William J. Foley, we have investigated the construction of a dam built by Ralph Carter of Longmeadow, whose business address is: Highland Knitting Company, 33 Lyman Street, Springfield, Mass. The dam in question is located on Big Brook at a point approximately on the Hampden-Wilbraham town line.

The dam consists of a concrete section comprising the spillway and earthfill on the easterly and westerly portions of the structure. The dam is only 3 to 4 feet in height, forms a pondage of less than one-half million gallons of water, and has a drainage area of 1.1 square miles.

The earthfill on the westerly end of the dam has considerable thickness and stability, while the fill on the easterly end is thin, soft and unsafe. The freeboard of the structure is also too small to provide an adequate safety factor.

It would be advisable to contact the owner of the structure and have the pond drawn down. The pond should not be refilled until plans and specifications of the structure have been filed and approved by your Board in the usual manner, and the dam reconstructed as designed and specified on the approved plans and specifications. Since the drainage area at this dam is over one square mile, I would interpret that the dam comes under your control.

Very truly yours,

By George H. McDonnell
George H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

December 11, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has completed the work of inspecting and checking all of the dams in the Town of Palmer and a portion of the dams in the Town of Ludlow and finds that the following dams require certain maintenance and repairs:

- ✓ A. Lake Thompson Dam in Palmer: One flashboard is still in place on the dam. This flashboard should be removed until after the heavy Spring runoff.
- ✓ B. Forest Lake Dam in Palmer: There is leakage thru the northerly abutment. A number of trees are growing on the abutment and their roots are apparently opening up the joints in the stone masonry. The earthfill behind the abutment has worn down. The trees should be removed, the abutment repaired, and the earthfill brought to proper grade.
- ✓ C. A. W. Holbrook Dam on Shearer Street in Palmer: This dam has been rebuilt for the purpose of constructing a swimming pool. Certain dike construction and new overflow construction has been started and in some cases completed. The dam, and particularly the dike, are in dangerous condition, should extreme runoff conditions occur. The gates in the structures should be opened wide and no water ponded until plans and specifications of the proposed work have been filed and approved and the construction carried on to completion in accordance therewith.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

December 18, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in Ludlow, Chicopee and Springfield and finds that the following dams require certain maintenance and repairs:

- ✓ A. Ackerman (upper) Dam in Ludlow: The wooden spillway has deteriorated and the earthfill of the dam shows signs of being washed out on the easterly side of the spillway. The spillway must be repaired to prevent further damage to the earthfill of the dam. Prior to the heavy Spring runoff the portion now washed out should be refilled and stabilized with heavy rip rap.
- ✓ B. Chicopee River Dam at Chicopee Falls: Repairs to the southerly abutment and the foundation of the drawoff gate structure are necessary. These repairs should be started and completed during the early part of 1952.

Respectfully yours,


George H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND
TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

November 27, 1951

The Honl. The Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Attention: William F. Stapleton,
Chairman

Gentlemen:

The undersigned has completed the inspection of all of the dams in the Town of Monson and a portion of the dams in the Town of Palmer and finds that the following require certain maintenance and repairs:

- ✓ A. Monson State Hospital - Second Dam Upstream West of Granite Street: Fill behind the northerly abutment wall has been partially washed out. The earth fill should be brought to grade with tamped gravel.
- ✓ B. Palmer Ice Company Dam: Improvements have been made to the dam and spillway, however, fill should be placed on the portion of the dam westerly of the spillway, to return the earthfill section of the dam to its original shape and grade.
- ✓ C. Thorndike Water Supply Dams: Both dams are somewhat delapidated and the lower dam is apparently leaking under the spillway near the drawoff area.

Respectfully submitted,

By


G. H. McDonnell
County Hydraulic Engineer

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

December 28, 1951

The Hon. The Board of County Commissioners
Hampden County Court House
Springfield, Mass

Attn: William F. Stapleton, Chairman

Gentlemen:

The undersigned has completed the work of inspecting all of the dams in Wilbraham, Hampden, East Longmeadow and Longmeadow and finds that with the exception of very minor irregularities, all dams were found to be in a satisfactory condition. In determining present ownership of dams requiring minor attention, such as the removal of a flashboard, the owners were either visited while on the inspection tours or were contacted at a later date. The irregularities were pointed out to the owners and they were either taken care of immediately or the owner gave assurance that he would take care of them in a day or two.

None of the irregularities were serious enough to require a letter of record. However, notes have been entered in my field inspection book.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

Hampden County Dams 1955 Tighe Report



1958 Reports

Report filed February 27, 1958 by George H. McDonnell, County Hydraulic Engineer. Report was conducted at the request of the Flood Relief Board and covers all dams regardless of size or ownership. This is a comprehensive report of the damage suffered as a result of "Hurricane Diane" on August 18-19, 1955, when over one foot of rain fell in one day.

Dam	Hampden County
-----	----------------

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991
GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

C D
Feb. 27, 1958


The Hon. The Board of County Commissioners
Hampden County Court House
Elm St.
Springfield, Mass.

Gentlemen:

On Tuesday, February 25, 1958, I received a telephone request from the Executive Secretary of the Massachusetts Flood Relief Board for certain information regarding dams in Hampden County. He was interested in obtaining a list of dams that suffered damage as a result of the 1955 flood.

Enclosed please find a copy of a communication sent to the Flood Relief Board. We have listed those dams that suffered damage to any great extent. The list does not cover just any one classification of dams but covers all dams whether they be privately owned, publicly owned, recreational dams or dams of a water supply or power development nature.

Very truly yours,


George H. McDonnell
County Hydraulic Engineer

GHM/f

COPY

CD
Feb. 26, 1958

Commonwealth of Massachusetts
Flood Relief Board
20 Beacon Street
Boston, Mass.

Att: Executive Secretary

Gentlemen:

In accordance with my conversations with Mr. Crosby of your office, via telephone on Tuesday, Feb. 25, 1958, I submit herewith a list of dams situated in Hampden County that were damaged as the result of the flood of August 1955. I have not listed those dams where minor damage occurred. Only those dams having serious but repairable damage or those completely washed out as the result of the flood are listed.

A. Agawam.

1. Agawam Woolen Company Dam.

This is an earth structure with a masonry spillway located northwesterly of the old Agawam Woolen Company plant and northerly of Elm Street in the central portion of Agawam. The earth embankment of this dam was breached in the flood.

B. Blandford.

1. Borden Brook Reservoir Dam of the Springfield Water Dept.

This is a large earth dam with a masonry spillway, on Borden Brook, just upstream from Cobble Mt. Reservoir. A portion of the downstream slope of the earth embankment on the northerly end of the dam slid. A part of the masonry spillway failed due to the slide. Downstream and away from the spillway a washout occurred in the natural ground on the north side of the spillway channel.

C. Brimfield.

1. Wheeler Dam.

This dam is on Mill Brook at Mill Road, just southerly of state highway Route 20, near the center of Brimfield. It is an earthen embankment carrying a road and had a masonry spillway. Flood water washed over the embankment and road causing two major washouts. The bridge carrying Mill Road over the spillway was lost into the spillway area itself.

2. Woodman Pond Dam, Dept. of Conservation.

This dam is located on Woodman Pond in the Brimfield State Forest, near the Brimfield-Wales town line. Water topped the dam and washed out a section of the earth embankment near the right end.

3. Maple Lake Pond Dam.

This is a stone masonry structure near the intersection of Sutcliffe Road with Palmer Road, just southerly of state highway, Route 20. The spillway of the dam itself was not damaged to any extent. Damage did occur to the masonry work of the left abutment area. Also, considerable debris has filled the pond volume.

4. Farrer Dam.

This was a masonry and earth dam located in the northerly section of Brimfield on Blodgett Mill Brook, just upstream from Lyman Road. The dam has been abandoned and a bridge placed at the site carrying the road over the dam location.

D. Chester.

1. Huntington Water Works Dam.

This dam is actually in the Town of Blandford but being adjacent to the Chester town line and accessible from the Chester highway, it is carried under the Town of Chester in our files. Damage occurred to the earth embankment.

E. Chicopee.

1. Bemis Pond Lower Dam.

This is an earth dam with a masonry spillway situated in Szot Park, in Chicopee. Damage occurred to the earth embankment.

2. Oxford Country Club, Upper Dam.

This dam is on the property of the Oxford Country Club on East Main Street in the Chicopee Falls section of Chicopee. It is located south of East Main Street. It was an earth embankment with a timber spillway chute. The dam was completely breached by flood water.

F. Granville.

1. Granville Reservoir Dam, Westfield Water Works.

This is a very large earth dam with a substantial masonry spillway. Tremendous damage was done to the masonry spillway chute and to the embankment of the dam adjacent to the chute and near the toe of the dam.

2. Winchell Dam, Westfield Water Works.

This is a stone masonry structure downstream of Granville Reservoir that is used as an intake reservoir. Damage was done to both abutment areas and to the natural surface of the valley flow downstream of the dam.

3. Japhet Dam, Westfield Water Works.

This is a small masonry and earth dam on Japhet Brook just upstream of its mouth on Dickerson Brook. During the flood a small portion of the earth embankment was washed away.

G. Hampden.

1. Goodwill Dam.

This is an earth and stone masonry structure located on East Brook at a point westerly of Monson Road in about the central portion of Hampden. The dam was topped by excess storm flow and a breach was washed thru its central section.

2. LaBonte Dam.

This is a large stone masonry dam situated in the Scantic River, just downstream from the central section of the Town of Hampden. The flood washed out the right abutment area and swept away the right end of this dam.

3. Driscoll Dam.

This is a small dam located adjacent to the easterly side of Somers Road. A washout occurred at the right side of the spillway releasing the small pond.

4. Carter Dam.

This is a very small masonry and earth embankment dam situated on Big Brook. A washout occurred at this structure.

H. Holland.

1. Holland Rod & Gun Club Lower Dam.

This dam is situated on the south side of Wales Road on a brook tributary to Brown's Brook. Flood waters overflowed the entire dam and washed away some of the boulders and earth from in front of the masonry wall.

2. Hamilton Reservoir Dam.

This is a masonry structure backed in part with earth that forms a very large reservoir. During the flood the dam

and abutment areas were topped and the road at the right of the dam was washed thru. This resulted in releasing the ponded waters and a major washout was formed around the right end of the dam.

I. Holyoke.

1. Lake Bray Dam, Mt. Tom Reservation.

This dam forms Lake Bray in the Reservation just off of state highway Route 5. In the flood a portion of the earth embankment carrying the road into the Reservation and forming the pond was washed thru.

2. Whiting Street Reservoir Dam, Holyoke Water Works.

This dam forms Whiting Street Reservoir at the foot of Mt. Tom. In the flood reservoir water flowed over the entire length of the very long earth backed stone masonry dam. A large portion of the earth embankment was washed away but the masonry wall withstood the force of the water and the Reservoir was not released. Considerable damage was done to the earth embankment and to the roadway at the dam.

3. Bray Reservoir Dam, Holyoke Water Works.

This was a small earth dam with a masonry spillway situated just off of state highway Route 202 in Holyoke. Flood waters washed thru the dam in the spillway area causing a major breach that released most of the stored water.

4. Ashley Pond Dam.

This is a very low dam that forms a large Reservoir of the Holyoke Water Works situated off of Route 202. Some damage was done to the dam embankment and to roadways adjacent to the Reservoir by the flood.

J. Ludlow.

1. Newcomb Dam.

This was a small earthen structure located on a small brook just northerly of the intersection of Poole Street and Alden Street. The flood waters breached the central portion of the earth embankment washing thru the entire dam.

2. Wilbraham Paper Co. Dam, Chicopee River.

This is a masonry and timber dam across the Chicopee River upstream of the Wilbraham Paper Company. In the flood, water passed around the right abutment of the dam and breached the natural soil back of the abutment. The dam itself suffered little damage but water in the pond was released

around the new channel formed behind the right abutment.

3. Gauthier Upper Dam.

This is a small earth dam with pipe spillway forming a pond off of Chapin Street. A washout extended thru the dam for a portion of the height of the structure.

4. Alden Dam.

This structure located on the brook below the outlet of Ludlow Reservoir of the Springfield Water Works was washed thru completely in its earth embankment section. The spillway is a masonry structure with wooden stop logs. The breach completely released the pond formed by the dam.

5. Ludlow Park Dept. Dam.

This dam is located off of Chapin Street in a northeasterly direction on property of the Town of Ludlow. The dam received some damage as the result of flood waters washing over the structure. Most of the damage consisted of a washout of earth and gravel materials from the small low embankment and the road that forms the dam.

6. Ackerman Lower Dam.

This dam is on a small brook southeasterly of Belchertown Road and easterly of Miller Street. It was an earth and masonry structure with a notch for a spillway. The dam was topped and a very large breach washed thru the structure.

7. Rozkuszka Dam.

This structure is a masonry dam on Higher Brook also known as Harris Brook at a point just upstream of Holyoke Street. The flood waters washed out the earth behind the right abutment and diverted the stream flow thru a new channel around the dam.

8. Carver Dam.

This is a very small field-stone masonry dam on Stony Brook in the northwesterly corner of Ludlow. The flood waters washed around the right end of this dam forming a new channel for the brook.

K. Monson.

1. A. E. Gaudreau Dam.

This dam was a small earth structure situated on Calkins Brook in the northwest corner of Monson. During the flood of 1955 the entire dam was washed away.

2. Monson State Hospital Lower Dam.

This dam is on the property of Monson State Hospital. In the flood a portion of the earth embankment at the right end of the structure was washed away.

3. Sullivan Bros. Dam.

4. L. DeFace Dam.

5. J. J. Burdick Dam.

These three dams were all masonry structures and located on a small brook tributary to Chicopee Brook, that flows thru the built up portion of Monson between Granite Street and Route 32. As the result of the flood all of these dams were completely washed away.

6. Ellis Mills Lower Dam.

This was a masonry structure located on Chicopee Brook just upstream from the Ellis Mills Building and situated westerly of Main Street in Monson center. The flood washed away the left portion of the dam. At that time Main Street was completely washed thru, a portion of the northerly end of the mill building was swept away.

7. Ellis Mills Upper Dam

This is a masonry overflow structure on Chicopee Brook located at the intersection of Hampden Lower Road and Bumpstead Road. A portion of the spillway was washed out by the flood. This spillway was made of heavy granite blocks.

8. Monson Water Dept. Dam.

This dam forms Monson Reservoir on Conant Brook just upstream of Wales Road. In the flood the abutment areas of the dam were topped and earth fill behind the downstream spillway walls was washed out. The training walls themselves were damaged or washed away.

9. Remington Dam.

This was an earth and stone masonry structure located on Twelve Mile Brook adjacent to Wood Hill Road and upstream of Wilbraham Road. The spillway was of the overflow type and was situated near the center portion of the dam. In the flood the entire central section of the dam was washed away.

10. Pulpit Rock Pond Dams.

There are two major dams that form Pulpit Rock Pond. The westerly dam suffered minor damage as the result of flood waters. This is an earth embankment structure with a masonry spillway.

The easterly dam also formed with an earth embankment and a masonry spillway was completely swept away by the flood.

11. Dr. Mace Dam.

This was a fairly large stone masonry structure on Twelve Mile Brook just upstream from Pulpit Rock Pond. The flood waters washed away approximately one-half of this stone masonry dam.

12. Dr. Sanderson Lower Dam.

This dam is at Reimer Road and the fill of the road forms a portion of the embankment of the dam. In the flood the west end of this dam, forming Baldwin Pond, was washed out. This washout breached the road and completely emptied the pond.

L. Montgomery.

1. Westfield Water Works Storage Reservoir.

This reservoir suffered damage as the result of flood waters washing around the right end of the earth embankment. During the flood the overflow from the dam exceeded the capacity of the masonry spillway chute. The relatively high earth embankment withstood the overflowing waters and only a minor amount of damage was done to the dam at the right abutment area.

M. Palmer.

1. Central Mass. Electric Co. Dam.

This dam was located on Quaboag River just south of the main line tracks of the Boston & Albany Railroad and also south of highway Route 20. It was a timber dam at one time for power purposes. During the flood the timbers of the dam were damaged and a washout occurred around the abutment of the south end of the dam. The dam was removed by the owner following the flood.

2. V. V. McNitt Dam.

This is a very small earthen and masonry structure located south of Nipmuck Street. In the flood the dam was topped and some earth fill was washed out on the downstream side of the masonry wall. Some damage also occurred at the spillway section.

3. Palmer Fire District No. 1 Lower Dam.

This dam forms the distribution reservoir for the water supply of Fire District No. 1 in Palmer. The structure is an earth embankment with a masonry chute type of spillway. In the

flood a breach was washed thru the center of the dam and the pond completely released.

4. Holbrook Pool Dams.

Two dams located off of Shearer Street formed a swimming pool for a private swimming club. The dams were earth embankment with masonry chute type spillways. The earth embankment at each of these two dams was breached by the flood waters.

5. State Fish Hatchery Upper Dam.

This is a fairly large masonry structure and forms a pond to provide water for the hatchery. In the flood the earth at the left side of the dam was washed out. The dam itself received no major damage.

6. Self Locking Carton Company, Diamond Match Co. Upper Dam.

This dam is situated on Ware River just upstream of the Thorndike section of Palmer. It is a large masonry structure with a spillway crest the full width of the stream. The left abutment area of the dam including a dike that extended from the easterly end of the masonry dam to about the railroad tracks of the Boston & Albany Railroad was topped and washed out. The masonry abutment itself was damaged.

N. Russell.

1. Strathmore Paper Co. Process Water Dam.

This is a small masonry dam situated on Potash Brook just southerly of Blandford Road, highway Route 23. The pond was topped by about 7 ft. of water over its crest during the flood. The pond volume was completely filled with gravel and sand washed from the valley above. The earth dike portion of the structure was completely washed away.

O. Southwick.

1. Dr. Logie Upper Dam.

This was a combination masonry and earth structure located on Shurtleff Brook, adjacent to Loomis Road. In the flood the dam abutment at the right end was washed out. As the result of this washout the entire pond was released. Also, a sizeable section of the dam failed when the breach was formed.

2. Congamond Lakes.

The north dike holding Congamond Lakes failed. This is an earth dike that was small in size but as the result of its failure considerable damage was done by the release of a

large quantity of water from North Pond. The south dike suffered some damage in being overtopped by flood waters.

3. Hathaway & Steane Company Dams.

These are two small dams situated off of College Highway Route 202, used for irrigation purposes. Both of these dams were breached by the flood waters.

4. Cass Dam.

This structure is located westerly of Foster Road at a point between Feeding Hills Road and South Longyard Road. The central section of this earth embankment dam was washed out in the flood.

P. Springfield.

1. Forest Park Lower Dam.

This dam is located on the Porter Lake system in the Forest Park area of Springfield and is the lower of three dams. The dam suffered damage at both abutments due to the topping of the abutment areas by the flood water. The dam itself withstood the force of the flood. Following the flood the stream of Porter Lake Brook passed around the dam thru the washed out soil.

Q. Tolland.

1. Lost Wilderness Dam.

This dam is situated on Twining Pond just to the rear of Lost Wilderness Ranch on East Otis Road. The dam was topped by the flood of August 1955 and a breach washed thru the center section. The dam originally was an earth embankment structure with tube spillway.

2. Tunxis Club Trout Pond Dam.

This dam is located on Trout Pond, situated on Pond Brook. The dam is a timber structure fronted with earth and with timber overflows. During the flood the dam was topped by about 1 ft. of water and the earth portion of the dam in front of the timber construction was washed out in three separate places. Planking, timbers and logs on the upstream side held and retained the pond. Damage to the structure in general was quite extensive.

3. Preston Dam.

This is an earth embankment with a masonry spillway situated on Ripley Brook just westerly of Amos Case Road. The dam is relatively high and in the flood the earth embankment was washed out just to the left of the masonry spillway. The breach is quite large and the entire pond was released.

R. Wales.

1. Shaw Dam.

This structure is an earth and masonry dam with a masonry overflow spillway located on Wales Brook, near the center of Wales. Laurel Hill Road passes over the dam and the spillway. In the flood the dam was topped and a portion of the earth structure washed thru.

2. Norcross Lower Dam.

This is one of eight dams situated on property of the Wild Life Sanctuary owned by Mr. Norcross. It is the lower of the dams on Vinica Brook. It is an earth embankment structure with a masonry spillway. In the flood the earth embankment was washed thru for a width of approximately 40 ft. to the left of the spillway structure. The entire pond was released by the breach thru the dam. None of the other remaining seven dams on this property sustained damage of any consequence as a result of the flood.

S. Westfield.

1. Chapin Pond Dam.

This is an earth structure situated just downstream of the outlet of Hampton Ponds. In the flood the central portion of the earth embankment was washed thru and the breach formed was sufficient to empty the pond completely.

2. Westfield Park Department Upper Dam.

This structure is on Sand Mill Brook and was a masonry overflow type of dam. The dam was breached in the flood.

3. Boy Scout Dam.

This structure is an earth and masonry dam situated on a tributary to Great Brook in the southeasterly portion of Westfield. The dam is relatively high but forms a very small pond. In the flood a portion of the earth embankment was washed out and a part of the spillway foundation was undermined.

4. Westfield Sportsmen's Club Dam.

This structure was an earth embankment with a masonry spillway. The embankment was overtopped by the flood and a sizeable breach washed thru. This breach completely emptied the pond.

5. Zombie Dam.

This was a very small structure located downstream of the Westfield Sportsmen's Club Dam. It was completely washed away by the flood water.

6. Tekoa Dam, Westfield Water Works.

This distribution reservoir dam is located downstream of the storage reservoir previously reported under Montgomery. This is a masonry structure and though the dam itself did not suffer any damage as a result of the flood, a considerable amount of damage was done to the earth of the valley immediately downstream and adjacent to the dam. Also, the reservoir itself was filled in to a great extent with gravel and sand washed down from upstream. Roadways, a small bridge and earth cover over the pipeline from the reservoir were washed out.

7. A. H. Wilgus Dam.

This is a small earth and timber crib dam situated off of Route 202. In the flood the central section of this dam was completely breached.

8. Stevens Paper Company Lower Dam.

This structure is a masonry dam on Little River at the site of the Stevens Paper Mill located just upstream of highway Route 202. The dam itself suffered little damage as the result of the flood. However, flood waters swept around the left abutment of the dam and thru the rear yard of the mill property. Extensive damage was done to mill buildings. One unit was completely wiped out. The river was diverted around the dam thru the washout.

9. Curtis Lane Dam.

This was a very small dam of masonry, situated on Munn Brook. The structure formed a small pond for private recreational purposes. As the result of the flood this dam was completely washed away.

10. Springfield Water Works Dams.

There are four dams in this group of structures located in the vicinity of the Springfield Water treatment facilities. One of the dams is known as the Intake structure and is downstream of the main Cobble Mt. dam. This structure is actually over the Westfield Town line in the Town of Russell but is listed in Westfield with the other group of nearby Springfield Water Works dams. A minor amount of damage was done to this structure as a result of the flood. The major damage being the filling to a great extent of the Reservoir volume with sand, gravel and debris washed down from the

valley above. The remaining three dams all located adjacent to the water supply filtering unit suffered minor damage to their earth embankments and their related spillway structures.

T. West Springfield.

1. Strathmore Paper Company Dam.

This is a large timber dam located across the Westfield River, upstream of the paper mill plant. Leakage developed in this dam as the result of the flood. Apparently flood debris smashing into the planking, on the upstream face of the structure, opened seams in the planking and actually split planking, allowing water to pass into and thru the crib section of the dam. Major repairs to the dam were required following the flood.

2. Fossa Dam.

This structure was located across Piper Reservoir Brook on the northerly side of the so-called White Church Hill. It formed a small pond known as Mill Pond. The dam was completely destroyed by the flood.

3. Country Club Dam.

This structure is located off of Piper Road and is on the property of the Springfield Country Club. The dam is an earth embankment with a masonry spillway. The flood waters washed a wide breach thru the earth embankment allowing free passage of the stored water and flow of the brook.

4. Piper Reservoir Dam, West Springfield Water Department.

This dam was formed by the fill that carried Piper Road over and across the Piper Brook Valley. Flood waters destroyed the embankment and completely washed out Piper Road and the dam.

5. Bear Hole Dam, West Springfield Water Department.

The dam at Bear Hole was a fairly large structure containing an earth embankment and a large concrete overflow structure. The flood washed out this dam completely. A major breach occurred thru the earth structure.

U. Wilbraham.

1. Wilbraham Paper Company Process Water Dam.

This was an earth, steel sheet piling and masonry structure located on Twelve Mile Brook upstream from the main line tracks of the Boston & Albany Railroad. Tremendous damage

was done to this structure. Major breaches were washed thru the dam and little of the structure remains today.

2. Dr. Sullivan Dam.

This is an earth embankment structure on Twelve Mile Brook upstream of the dam above listed. The spillway consisted of a channel around the dam having a concrete cutoff wall to prevent erosion. The earth embankment section of the dam was topped and partially cut thru by the flood waters.

3. Gengreau Dam.

This is an earth and masonry structure located on a feeder brook of Mill River. It is situated upstream of Soule Road. During the flood the dam was topped and the earth embankment to the right of the spillway was entirely washed away.

Many of the hereinabove mentioned dams have been repaired and are now again in good condition. A number of the dams, not herein listed, suffered minor damage.

If more detailed information is required about any one of the herein briefly described dams, kindly call or write the undersigned on this matter.

Very truly yours

George H. McDonnell
County Hydraulic Engineer

GHM/omb

Hampden County Dams, Tighe report - 1955 (1)



1955 Reports

Rainfall was the heaviest on record in Hampden County during August 18-19, 1955 for a period of 24 hours. Generally, one foot of rain fell during the day. This is a summary of conditions found as of August 23, 1955 by George H. McDonnell, Hydraulic Engineer.

Kennedy Dam

City/Town	Palmer
City/Town	Springfield
City/Town	Brimfield
City/Town	Chicopee
City/Town	Holyoke
City/Town	Westfield
City/Town	Southwick
City/Town	Montgomery
City/Town	Ludlow
City/Town	Monson
Dam	Duda Dam
Dam	Textile Printing Company Dams
Dam	Otis Dam
Dam	Piper Reservoir Dam
Dam	Paradise Pond Dam
Dam	Forest Lake Dam
Dam	Maxwell Dam

Dam	Green Dam
Dam	Baldwin Dam
Dam	Mace Dam
Dam	C S Newcomb Dam
Dam	Granville Reservoir Dam
Dam	Stevens Paper Company Dam
Dam	Ludlow Manufacturing Company Dam
Dam	Kowalzek Dam
Dam	Ludlow Reservoir Dam
Dam	Ackerman Dam
Dam	Alden Dam
Dam	Roberts Pond Dam
Dam	Bemis Pond Dam
Dam	Riddle Dam
Dam	Collins Manufacturing Dam
Dam	Water Power Company Dam
Dam	Schaeffer Dam
Dam	Fossa Dam
Dam	Carver Dam
Dam	Sullivan Dam
Dam	Westfield Reservoir Dam
Dam	Sixteen Acres Park Dam

Dam	Ashley Pond Dam
Dam	Bear Hole Reservoir Dam
Dam	Wheeler Dam
Dam	Ludlow Park Department Dam
Dam	Block Dam
Dam	Collins Dam
Dam	Gauthier Dam
Dam	Bray Pond Dam
Dam	Chapin Pond Dam
Name	Tighe & Bond
Streets	Mill Road
Water	North Pond
Water	Connecticut River
Water	Bray Reservoir
Water	McLean Reservoir

Rec 8/24/55

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND
CONSULTING ENGINEERS
GEORGE H. McDONNELL, PROP.
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
August 23, 1955

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL
C-D

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

We are now in the process of inspecting each and every dam in Hampden County for the purpose of determining the damage, if any, caused by the extremely heavy rain fall of August 18th and 19th. This rainfall was the heaviest on record for a short period of 24 hours. The rainfall varied in different areas of the County but in general can be considered as approximately 1 foot of rain in a 24-hour period. More detailed rainfall data will be supplied in a later report, following the completion of the inspection of all of the dams.

Inspection of dams resulting from the storm was actually started on the afternoon and evening of August 18th. During the 19th, inspection work consisted mainly of checking on the condition of those dams accessible to the undersigned and personnel of this office who were stationed in various communities at the time the rainfall occurred with its greatest intensity. Road washouts and general storm conditions greatly hampered the movement of the undersigned and our personnel. However, as many dams as could possibly be watched and checked were visited on Friday, the 19th.

Since Saturday, work has gone on continuously on the inspection of dams. Personnel from this office will continue the inspection work until every dam has been checked. This work will probably not be completed until well into the month of September. A general summary of conditions as found so far is as follows:

CHICOPEE - Roberts Pond Dam. This dam is O.K. but there will be certain maintenance required at the end of the spillway chute. The new spillway functioned very well and though the natural ground below the spillway was washed out, the spillway foundation was not dangerously undermined. Filling of this large cavity in the natural ground downstream of the spillway chute will be required.

Bemis Pond Dam. The old dam was damaged during the flood waters but this damage was prevented from spreading by the use of many sand bags. The dam held but will require repairs. Bemis Pond new dam was inspected during the storm and apparently has had no major damage.

HOLYOKE - Bray Pond Dam. Bray Pond Dam at Mount Tom State Reservation has been washed out at a point some distance east of the spillway.

Bray Reservoir. Bray Reservoir located between Ashley Reservoir and Route 202 was washed out at the spillway area.

Whiting Street Reservoir. This is O.K. but was damaged by the wash-out of the earth fill downstream of the masonry dam.

Ashley Pond Dam. This is O.K. and required certain preventative maintenance shortly after the storm.

Water Power Company Dam. The Water Power Company Dam on the Connecticut River is O.K.

McLean Reservoir. The high service reservoir dam, McLean Reservoir, is O.K.

Schaeffer Dam. The Schaeffer Dam located westerly of the Northampton Highway near the entrance to Mount Tom Reservation was partly damaged by the washing out of a large amount of soil downstream of the dam core wall. The core wall held and is in good condition.

Kennedy Dam. The Kennedy Dam is O.K.

LUDLOW - Carver Dam is washed out around the ends.

Block Dam is washed out around the ends.

Ludlow Park Department Dam is washed out.

Collins Dam across the Chicopee River is O.K. except for a small amount of earth erosion on the canal side.

Alden Dam was washed out.

Ackerman Lower Dam has been washed out.

Ackerman Upper Dam is O.K.

Ludlow Reservoir Dam of the Springfield Water Works is O.K.

LUDLOW (CONT.)

- Kowalzek Dam was topped by the run-off but the dam is still intact.

Ludlow Mfg. Co. Dam at Red Bridge is O.K. and the adjacent dike is also O.K.

C. S. Newcomb Dam has been washed out.

Gauthier Upper Dam was damaged and is now being repaired.

Dr. Sullivan's Dam has been washed out.

R. R. Riddle Dam has been washed out.

Collins Mfg. Co. process dam has been washed out.

MONSON - Dr. Baldwin Lower Dam has been washed out.

Dr. Mace Dam was washed out.

S. H. Green Lower Dam has been washed out. The dam at the east end of the Green Pond is O.K.

Maxwell Dam is O.K.

Paradise Pond Dam is O.K.

PALMER - Otis Dam across the Chicopee River was topped but the dam is O.K.

Textile Printing Company Dams are both O.K.

Duda Dam was topped but it is O.K.

Forest Lake Dam was topped but it is O.K.

MONTGOMERY - Westfield Reservoir was topped and the surface of the earth fill of the dam was slightly damaged. However, the dam itself is O.K.

The Hon. the Board of County Commissioners
Springfield, Mass.

-4- August 23, 1955

SOUTHWICK - North Pond in the Congamond Lake Group was released when the ground at the northerly end of the pond in the area of the old canal was washed through by waters that had risen an estimated 6 feet or more above normal level.

SPRINGFIELD - Park Department Dam at Sixteen Acres is O.K.

WESTFIELD - Stevens Paper Co. Dam has been damaged on one end.

Granville Reservoir Dam of the Westfield Water Department is O.K. However, the lower end of the spillway chute located a considerable distance below the dam proper has been damaged.

Chapin Pond Dam located below Hampton Ponds has been washed out.

WEST SPRINGFIELD - Piper Reservoir Dam has been washed out.

Bear Hole Reservoir Dam has been washed out.

Fossa Dam has been washed out.

It can be noted from the above that many of the dams listed as completely washed out are usually small structures that have been constructed for either personal or group fishing and recreational purposes. A number of the dams were municipally owned structures or structures used by industry in carrying on their business.

It is too early to know for certain the exact number of dams that have been damaged or destroyed. It would appear that probably 30% will either be found to have been washed out or to have suffered major damage. Many of these dams will be of the small type, individually owned, and not actively used to any great extent. I would presume that a large majority of these structures may never be replaced.

Those dams used by industry and for municipal purposes will, of necessity, be repaired just as quickly as the owners can arrange for the repair work to be started. With this thought in mind, it would probably be advisable for us to notify each owner having a dam that has been either washed out or seriously damaged by the flood waters, that repairs can not be made until plans showing the repair work are filed for your review and approval or recommendations.

The Hon. the Board of County Commissioners
Springfield, Mass.

-5- August 23, 1955

The type of rainstorm experienced on August 18th and 19th may occur again and, in all probability, will even be exceeded in its intensity and total rainfall. Dams that are to be rebuilt should be repaired or rebuilt in such a manner that spillway capacity is increased to meet the flow requirements brought about by the tropical type of storm that we are now experiencing in this section of the United States.

Many of the dams that have been washed out are still standing but the water that they impounded was released by washouts occurring around the ends of the dam. Water would rise to a height such that it would flow around the dam, eating into the side hills and eventually causing a major washout that would release the impounded waters and leaving the masonry structure of the dam standing naked, so to speak.

With your approval, we will notify owners of all damaged structures to contact the undersigned for advice and a review of their proposed reconstruction prior to the preparation and filing of plans with your Board.

Respectfully Submitted,

GHM*emm

George H. McDonnell
County Hydraulic Engineer

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND
CONSULTING ENGINEERS
GEORGE H. McDONNELL, PROP.
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL
C-D

August 25, 1955

*Rec
Aug 26*

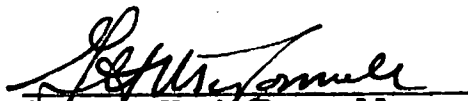
The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

Enclosed for your information and files are copies of letters sent out to various owners of dams, relative to telephone calls made to this office regarding information pertaining to the repair and reconstruction of their damaged dams.

The enclosed letters are self-explanatory.

Very truly yours,



George H. McDonnell
County Hydraulic Engineer

GHM*emm
encs.

Letters dated August 25, 1955 to:-

Cohen Bros., 846 Bay Street, Springfield, Mass.,
Re: Dam at Oxford Country Club.

F. Ackerman, Belchertown Road, Ludlow, Mass.,
Re: two dams on his property.

Mr. Harry Angell, Supt. of Water Dept., 23 Sackett Street,
Westfield, Mass.
Re: Dam at Chapin Pond.

Board of Public Works, City Hall, Westfield, Mass.,
Re: Dam at Chapin Pond.

Board of Water Commissioners, Fire District No. 1,
Palmer, Mass.
Re: Dam at source of water supply.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

CD

Oct. 10, 1955

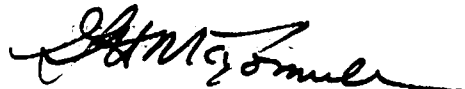
The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Gentlemen:

I have this day met with Mr. Gordon Butler of Springfield, owner of the old Wheeler dam on Mill Road in Brimfield. The dam in question not only forms Mill Road but also impounds water for the purpose of operating an old grist and saw mill. This mill is now owned by Mr. Butler. Mr. Butler brought with him a deed to his property showing that he owns the land and buildings downstream of Mill Road. From the deed it would appear that he has flowage rights and also a right to construct and maintain the dam. Undoubtedly there are other deeds and agreements relative to this matter that may describe more definitely the rights and responsibilities of all parties concerned with the dam, the road, the pond and the adjoining lands.

In discussing the matter of the damaged dam with Mr. Butler, he acknowledged the fact that he understood the requirements relative to the filing of Plans and Specifications for dams being repaired or constructed. However, he doesn't feel that he will be the party involved in preparing Plans and Specifications as owner of the dam. It apparently is the feeling of Mr. Butler that the Town probably is the owner or the responsible person having to do with the restoration of Mill Road and the repair of the dam.

Very truly yours



GHM*cmb

George H. McDonnell
County Hydraulic Engineer

WATER SUPPLY

SEWERAGE

SEWAGE DISPOSAL

STRUCTURAL ENGINEERING

**TIGHE & BOND, Inc.
CONSULTING ENGINEERS**

189 HIGH STREET

HOLYOKE, MASSACHUSETTS

GEORGE H. McDONNELL

PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS

HIGHWAYS & BRIDGES

HOUSING DEVELOPMENT

WASTE DISPOSAL

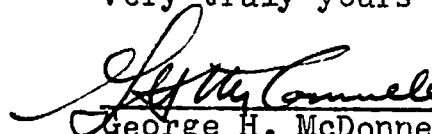
CD
Oct. 19, 1955

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Gentlemen:

Enclosed for your information and file purposes please find a copy of correspondence recently sent out regarding dams in Hampden County. The contents of the enclosed are self explanatory.

Very truly yours


George H. McDonnell
County Hydraulic Engineer

Enc.
GHM*cmb

Letter Oct. 19, 1955 ^{to} ~~from~~ Mr. Emile L. Labonte, 31 W. Allen Ridge Road, Springfield, Mass., Re: Dam on Scantic River in Hampden, Mass.

Letter ^{to} ~~from~~ John L. Dickinson, dated October 17, 1955, Re: dam in Southwick on a tributary of Great Brook

Letter ^{to} ~~from~~ Board of Selectmen, Brimfield, Mass., dated October 10, 1955, Re: Old Wheeler Dam, owned by Gordon Butler of Springfield.

C-D

August 25, 1955

Cohen Bros.
846 Bay Street
Springfield, Mass.

COPY

Attention Mr. George Cohen

Dear Sir:

I have received your telephone call regarding information relative to the dam at the Oxford Country Club that was washed out during the recent heavy rain storm. I have telephoned you on two or three occasions but have been unable to reach you to discuss the matter directly with you. If you would like, I would be pleased to meet with you some day this coming week at the site of the dam to go over the situation in the field and to make recommendations and advise you regarding its replacement and reconstruction.

If you would kindly let me know either by mail or telephone as to what time of day on either Wednesday or Thursday, August 31st or September 1st, would be best for your schedule, I will plan to meet you at the Oxford Country Club and review proposed plans, and advise you on the repair and replacement of the damaged structure.

Very truly yours,

GHM*emm

George H. McDonnell
County Hydraulic Engineer

COPY

C-D

August 25, 1955

Mr. F. Ackerman
Belchertown Road
Ludlow, Mass.

COPY

Dear Sir:

I have received a message from you regarding your request for advice about the dam on your property that went out during the storm of last week.

An Engineer from this office has already inspected your two dams and reports that the lower dam was washed out but that the upper dam held during the storm. If you plan to replace or reconstruct the lower dam, it will be necessary to prepare plans and specifications of the proposed work and to submit these plans and specifications to the County Commissioners for their approval. No work should be done on the dam until you have had your plans and specifications approved.

In view of the fact that the dam was damaged by the recent storm, it would be well to incorporate in the work of reconstructing the dam additional spillway capacity so that the structure will be made safe should it be subjected to another tropical type storm similar to that of last week.

If you desire to have the undersigned meet with you in the field and to advise you regarding repairs to your dam, I will be pleased to go to Ludlow some day next week and discuss the matter with you. Kindly mail a note to me at this address telling me the date and time best suited to your schedule, or telephone a message in requesting a date and time, and I will be glad to confirm your request or to suggest an alternate date if I am busy.

Very truly yours,

GHM:emm COPY

George H. McDonnell
County Hydraulic Engineer

August 25, 1955

C-D

Mr. Harry Angell,
Supt. of Water Dept.
23 Sackett Street
Westfield, Mass.

COPY

Dear Sir:

Enclosed for your information and file purposes is a copy of a letter sent to the Board of Public Works relative to the telephone conversation I had with you recently regarding the repair of the dam at Chapin Pond.

As of the present time I have been unable to contact Mr. Cowles regarding any information he might have in connection with the responsibility of the City for at least replacing the roadway across the dam, if the City decided not to replace the dam.

I will contact you the early part of next week for an appointment to get together with you to go over all of the dams under control of your department and to review the damage at each of the structures.

Very truly yours,

GHM:emm

George H. McDonnell
County Hydraulic Engineer

COPY

C-D

August 25, 1955

Board of Public Works
City Hall
Westfield, Mass.

COPY

Gentlemen:

As you probably know, the dam at Chapin Pond just downstream from the outlet to Hampton Ponds has been washed through in the central section and that the road on top of the dam consequently is not passable.

Property owners on the far side of the dam are concerned regarding access to their property. Is it planned to repair this dam and restore the pond to its original condition? If so, plans and specifications of the proposed repair work should be prepared and filed with the County Commissioners for review and approval.

The undersigned would be pleased to confer with you or your representative regarding the repair of the dam and any additions or alterations to this structure that might be advisable to guarantee that it will safely pass extremely heavy run-off similar to the tropical type storm recently experienced.

Very truly yours,

GHM:emm

COPY

George H. McDonnell
County Hydraulic Engineer

C-D

August 25, 1955

Board of Water Commissioners
Fire District No. 1
Palmer, Mass.

COPY

Gentlemen:

I have received your telephone request relating to the washed out dam at your source of water supply, regarding proper steps to be taken in order to repair the dam.

An engineer from this office has inspected the dam in the field and reports that the lower of your two dams was breached in the center area and that you have sand-bagged the opening in order to give some water to your District.

The correct procedure in repairing the dam is to have some qualified person, preferably an engineer, prepare plans and specifications for the closing of the breach at the dam. These plans and specifications should then be filed with the County Commissioners of Hampden County for review and approval.

In preparing plans and specifications for the repair of the dam, it should be kept in mind that the dam failed because of its inability to withstand the extremely high run-off of the recent heavy rainstorm. Consequently, in doing any work on the dam and in preparing plans for this work, it should be kept in mind that alterations to the dam may also be necessary in order that the structure can be made to safely pass storms of similar intensity to that just experienced.

If you wish, the undersigned would be pleased to visit the dam with you or your representative on Monday, August 29th. If you will kindly notify this office at Holyoke Jefferson 3-3991 of the hour of the day best suited to your schedule, the undersigned would be pleased to be in Palmer at that time. The morning of August 29th would be best for my schedule. A telephone call to this office confirming a time to meet either at your office or at the dam would be satisfactory.

Very truly yours,

COPY

GHM:emm

George H. McDonnell
County Hydraulic Engineer

COPY

CD

Oct. 10, 1955

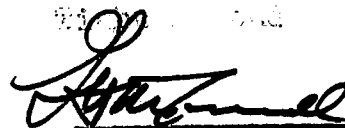
The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Gentlemen:

I have this day met with Mr. Gordon Butler of Springfield, owner of the old Wheeler dam on Mill Road in Brimfield. The dam in question not only forms Mill Road but also impounds water for the purpose of operating an old grist and saw mill. This mill is now owned by Mr. Butler. Mr. Butler brought with him a deed to his property showing that he owns the land and buildings downstream of Mill Road. From the deed it would appear that he has flowage rights and also a right to construct and maintain the dam. Undoubtedly there are other deeds and agreements relative to this matter that may describe more definitely the rights and responsibilities of all parties concerned with the dam, the road, the pond and the adjoining lands.

In discussing the matter of the damaged dam with Mr. Butler, he acknowledged the fact that he understood the requirements relative to the filing of Plans and Specifications for dams being repaired or constructed. However, he doesn't feel that he will be the party involved in preparing Plans and Specifications as owner of the dam. It apparently is the feeling of Mr. Butler that the Town probably is the owner or the responsible person having to do with the restoration of Mill Road and the repair of the dam.

Very truly yours



George H. McDonnell
County Hydraulic Engineer

COPY

GHM*cmb

CD
Oct. 10, 1955

COPY

Board of Selectmen
Town Hall
Brimfield, Mass.

Gentlemen:

An inspection of the dams in Hampden County shows that the old Wheeler dam, now owned by Gordon Butler of Springfield, was damaged in the flood and that major repairs are necessary if the dam is to be rebuilt and Mill Road returned to its original condition.

If, in the reconstruction of Mill Road, the dam is rebuilt and water is again ponded, it will be necessary, in accordance with the Provisions of Chapter 253, of the General Laws, to file plans and specifications with the County showing the proposed repairs. A copy of Section 44 thru 50 of Chapter 253 is enclosed herewith.

I discussed the matter of reconstruction of the dam with Mr. Butler and pointed out to him the requirements of Chapter 253 of the General Laws.

If you have any questions on the above, please contact the undersigned.

Very truly yours

Enc.
GHM*cmb

George H. McDonnell
County Hydraulic Engineer

CD

COPY

Oct. 19, 1955

Mr. Emile L. Labonte
31 W. Allen Ridge Road
Springfield, Mass.

Dear Sir:

Your dam, on the Scantic River, in Hampden, Mass., was washed out around the northerly end during the August flood. The dam, as it exists today, does not pond any water. However, the flow of the Scantic River thru the washed out northerly end could damage the road and thus presents a condition potentially dangerous to the safety of all persons and to public property. Undoubtedly you plan to either repair the dam or to take some action to protect the northerly bank of the stream.

Before any work can be done regarding the impounding of water and making additions to or altering and repairing the dam, plans and specifications must be filed with the County in accordance with the provisions of Chapter 253 of the General Laws. A copy of sections 44 thru 50 are enclosed herewith for your information and file.

It is my understanding that you are planning to sell the dam and the adjacent property. It is also my understanding from my telephone conversation with you this date, that you are at present the Owner of the dam. If the structure does change ownership on Friday of this week as indicated by you, will you kindly notify the new Owner of the contents of this letter and inform the undersigned of the name and address of the new Owner, when and if a transfer of the property is made.

Very truly yours

Enc.
GHM*cmb

George H. McDonnell
County Hydraulic Engineer

C-D

October 17, 1955

Mr. John L. Dickinson
College Highway
Southwick, Mass.

COPY

Dear Sir:

This will confirm our telephone conversation of Wednesday, October 12, 1955, relative to a small dam that you own in Southwick on a tributary of Great Brook. The dam is located upstream from Granville not too far distant from the intersection at the center of Town with College Highway.

It is my understanding that the size of the pond formed by the dam is approximately 100 feet in length by 30 feet in width and 3 feet in average water depth. The height of the dam above the bed of the stream measured on the downstream side of the dam is less than 10 feet. An examination of the topographical map of Southwick shows that the drainage area tributary to your dam is approximately 0.9 square miles.

Based upon the above and provided that on reconstructing the dam, the size of the pond is not increased to store more than one million gallons of water and the height of the dam is not greater than 10 feet above the bed of the stream measured on the downstream side of the dam, the proposed dam repairs will not come under Chapter #253 of the General Laws and consequently a petition together with plans and specifications need not be filed with the County of Hampden.

Very truly yours,,

GHM.emm

G. H. McDonnell
County Hydraulic Engineer

Hampden County Dams 1955 Tighe Report (2)



1955 Reports

Three reports filed by Tighe & Bond, August - September 1955, by George H. McDonnell, Hydraulic Engineer. Relating to the flood of August 18-19, 1955.

Dam

Hampden County

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND
CONSULTING ENGINEERS
GEORGE H. McDONNELL, PROP.
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
August 26, 1955

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL
C-D

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

The following is a supplementary report, in brief, of the status of dams inspected in Monson, Springfield, Longmeadow, Palmer, Brimfield, Hampden and Holland. These inspections were made in part by the undersigned and personnel from this office working in the field on August 23rd, 24th and 25th, 1955. The work is continuing and will continue, until all dams in the County have been inspected.

Dams requiring special attention will be reinspected and those that are to be repaired and rebuilt will be inspected on numerous occasions when reconstruction is under way. All owners of dams contemplating reconstruction will be informed of the need for preparing plans and specifications. It is possible that some owners might start reconstruction unaware of the conditions and requirements of Chapter 253 of the General Laws. When and if these cases are discovered, we are notifying the owner immediately of the requirements of the General Law and are making a practice of submitting to the owner a mimeographed copy of the Law.

The following are the dams inspected, as mentioned above, and their condition in brief.

MONSON

Eaton Dam (Lake Paradise). Was topped but O.K.

Ellis Mills Dam. Upper Pond. Spillway washed out down to about 7 ft. End of dam still remains.

Monson Associates Dam. O.K.

W. C. Moulton Dam (Smith Pond). O.K. Some minor repairs needed.

Aldrich Dam. O.K.

C. P. Bradway Dam (road not passable).

Bumstead Dam. Was topped but O.K.

J. R. Calkins Dam. Was topped but O.K.

Elliot Pond. Washed out. This pond is next to a large brook (spring fed).

The Hon. the Board of County Commissioners
Springfield, Mass.

-2- August 26, 1955

MONSON (CONT.)

Springfield Sportsman's Club Dam. Was topped but O.K.

Liscek Dams. Were topped but O.K.

Monson Water Works Dam. Was topped but O.K.

SPRINGFIELD

Springfield Webbing Co. (now Narrow Fabric Corp.) 235 Mill
Street. Dam O.K.

Springfield Waste Co. Dam. O.K.

Forest Park Dams:

Porter Lake Dam O.K.

Middle Dam O.K. but needs 2 loads of fill.

Lower Dam. End of earthen part of dam was washed out.
(spillway O.K.)

Springfield Park System (Sixteen Acres Dam). Was topped but O.K.

Springfield Park System (dam on North Branch of Mill River) O.K.
(Breckwood Park)

LONGMEADOW

Longmeadow Swimming Pool Pond Dam was topped but O.K.

Longmeadow County Club Dam O.K.

Turner Park Dam O.K.

PALMER

Holbrook, Meadow Brook Club. 2 Dams topped and washed out.

Mongo Dam O.K.

Colgan-Sherman Co. Dams:

Lower Dam O.K. except on the Railroad Side it was
topped but otherwise is O.K.

Upper Dam - earthen part washed out. Same place as
once before. Has water to crest.

State Fish Hatcheries Dam:

Lower Dam - O.K. except road was washed out.

Upper Dam - earth washed out. No water in pond.

Palmer Town Farm Dam - same as before. not bad and O.K.

Thorndike Water Supply Dams - both of them are O.K.

PALMER (CONT.)

Lake Thompson Dam. Saved. Using Sand Bags. O.K.

Palmer Fire District #1 Dams:

Lower Dam - breached in the center. Town sandbagged the
opening to give some water to the town folks.
Upper Dam - O.K.

Hinkson Dams:

Lower Dam - Gone
Upper Dam - O.K.

Central Mass. Elec. Dam on River. Wood cribbing broken and a
washout at one end of dam.

McNitt Dam. O.K. Some minor washout at spillway. Pond O.K.

BRIMFIELD

Maple Lake Dam. Topped and earth washed away but pond O.K.

Monette Dam. Gone.

C. R. Wheeler Dam (formerly Campbell Dam). Breached two places.
Bridge is down at one end. Holds only a
little water.

Springfield Boys Club Dam. O.K. Same as last inspected.

Snell Dam. O.K.

Cheney Dam. O.K.

HAMPDEN

Kellogg Dam. O.K.

HOLLAND

Hamilton Woolen Mills Dam (Hamilton Residence). Large pond
end at earth section washed out.

Sichol Dam. O.K.

Rorabough Dams:

Lower Dam. Fair Water drawn down.
Upper Dam. O.K.

Wing Dam. Access road washed out.

Sagalyn Dam. Concrete Dam O.K. but dike completely washed out.

The Hon. the Board of County Commissioners
Springfield, Mass.

-4-

August 26, 1955

HOLLAND (CONT.)

Shaw Dam. Spillway is alright. Earthen part of dam washed away but repairs are already done. Pond full.

Maynard Dam. O.K.

Squire Dam. O.K. Pond full.

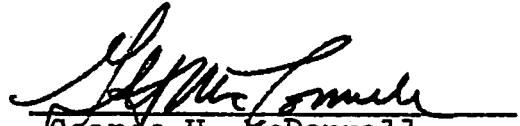
Perry Dam. was topped some washout. no water in pond.

Norcross Dams:

Lowest Dam. Spillway alright but earth dam was topped and has a washout in structure.

The other Norcross 3 large dams upstream are O.K.

Respectfully submitted,



George H. McDonnell
County Hydraulic Engineer

GHM*emm

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND
CONSULTING ENGINEERS
GEORGE H. McDONNELL, PROP.
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

CD

Sept. 2, 1955

The Honorable the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Massachusetts

Gentlemen:

The following is a summary of the condition of dams inspected this past week by the undersigned and personnel of our office. The dams are listed by Towns and their general condition indicated:

MONSON

Church Mfg Company dam - end washed out. No pond.
Moulton Dam on Chicopee Brook - O.K. Full pond.
Moulton Dam on small tributary - O.K. Full pond
Anderson Dam - O. K. Full pond.
Ellis Arch Dam - one end and retaining walls all gone.
Burdock Dam. Washed out.
Depace Dam. Washed out.
Sullivan Dam. Washed out.
A. L. Brown Dam. O. K.
Remington Dam, spillway and dam(center part of structure)
Washed out.

MONSON STATE HOSPITAL

Dam #1 - End washed out
Dam #2 - breached(Same condition as in previous years)
Dam #3 - NO DAM (Same condition as in previous years)

WILBRAHAM

Y.M.H.A. Dam - O. K.
Gengeau Dam - end washed out - spillway O. K.
Powers Dam - fair condition - pond full

HAMPDEN

R. F. Sazama small dam. Fair. Pond full
Carter Dam. Road is out.
Enslin Dam - O. K.
H. Goodwill dam. Breached. No pond.
Rockwell Dam. O. K. A small washout at end of dam.
Stalker Dam. Fair. Some of the top crest stones have been
washed away.

The Hon. the Board of County Commissioners
Springfield, Massachusetts

CD
Sept. 2, 1955

SOUTHWICK.

Creeger Dam (now Cass Dam) washed out.

WESTFIELD

Springfield Boy Scouts Dam - Robinson Camp- OK - except gravel was washed away from the concrete core wall. Pond full.

SPRINGFIELD

Bay State Plumbing & Heating Company on Mill Brook - O.K.
Van Horn Park - Lower Dam - O.K.
Van Horn Park - Upper Dam - O.K. should be reviewed for a better overflow.
Hogan Lower Dam - taken down last year
Hogan Upper Dam - breached some time ago and still the same as for past years.
Storm Drop Forge Dam - O.K.
Gaimari Dam - abandoned as dam last year.
Fitzgerald Lower Dam - O.K. Pond full. Spillway wall needs attention.
Fitzgerald Upper Dam. O. K. Pond full.
Bassett small diversion dam - delapidated.
Pond dam washed out through center

EAST LONGMEADOW

Wetstone Dam on Freshwater Brook above Crescent Lake - washed out - was topped.
Wetstone Dam on Jawbuck Brook above Shaker Pond-spillway end of dam washed out.
Wetstone Dam on Jawbuck Brook north of Denslow Rd.washed out.
Forest Park Dairy Dam - O.K. washout in natural ground 40'x150'

INDIAN ORCHARD

Ludlow Mfg & Sales Co. Dam on Chicopee River - Dam and retaining walls O. K. Washed out earth on Canal flume side. No damage to Dam structure.
Indian Orchard Dam - O.K. End retaining wall sand bagged.

CHICOPEE

Oxford County Club. - Upper Dam - washed out
Oxford Country Club - Lower Dam - O. K.


The Hon. the Board of County Commissioners
Springfield, Massachusetts

CD
Sept. 2, 1955

CHICOPEE(Cont'd)

Water Department small intake dam - O.K.
Water Department Lower Dam on Field Brook - O.K. small
road washout.
Water Department Storage Reservoir - O. K.
Slate Dam - O. K. Concrete is disintegrating.
Hampden Bleachery - no Dam - abandoned in past.
Sullivan Dam - Red Barn - both dams breached previously and
never rebuilt.
Wyszatyscki Dam - North pond was topped - Dam O. K.
Spillway needs cleaning.
South Pond Dam O. K. - needs a little fill.
Fairview Sportsmen's Fish and Game Club Inc. Trout pond washedout
Fairview Sportsmen's Fish & Game Main Dam - gap a little wider
than previously
Langwald Dam - No Pond - abandoned as before
Hampden Brewery Dam - O. K.
H. T. Messer - formerly Leameaux Dam- still intact - no pond.
Spillway should be repaired or dam breached to allow free
flow for brook.
Fortier Dam - still standing - no pond behind dam.
Veterans of Foreign Wars Dam - O. K. pond filled with silt.

Respectfully submitted


George H. McDonnell
County Hydraulic Engineer

GHM/cmb

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND
CONSULTING ENGINEERS
GEORGE H. McDONNELL, PROP.
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

CD

Sept. 9, 1955

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Massachusetts

Gentlemen:

The inspection of all dams in Hampden County has been carried on continuously since the flood of August 18-19, 1955 and the following is a report of the general condition of each dam inspected since our previous report to your Board:

AGAWAM:

Bonomi Dam: Same as in past, no pond formed.

Agawam Woolen Co. Dam: Topped and washed out. No pond formed.

Agawam Sportsman's Club Dam: Spillway is OK. Earth part of dam washed out.

K. Hinshaw(Silver Lake) Dam: OK. Pond full

P. Korsen Lower Dam: OK. Pond full.

P. Korsen Upper Dam: OK. Pond full. Spillway overflow pipe needs cleaning..

Zarra Dam: OK. Pond full. Met Mr. Zarra- he will increase swale.

Donato Dam: OK. Pond full.

Gogulski Dam: OK. Was topped. Road over dam washed in places. Pond full.

WEST SPRINGFIELD:

Worthy. P. Co. Dam: Little trace of spillway dam - gone years ago.

Strathmore Pa. Co. Dam: OK. Dike is being filled somewhat. Toe of dike on river side was washed in places. Was not topped. Holes in planking and leakage thru planking being repaired.

Mittineague Park Dams: Same as in 1954. Topped and little damage.

Fossa Dam: Washed out.

Piper Reservoir Dam: Washed out.

Country Club Dam: Washed out.

Lyncosky Dam: Topped and washed out. A new pipe culvert has been installed using steel barrels placed end for end and not welded. Poor construction. It is doubtful if this is a dam under the Law, Chapter 253.

Drobat Dam: Same as in 1954.

Farnsworth Dam: Breached for years.

Allen Dam: Was topped and dam still is the same. Today no pond is formed.

The Hon. the Board of County Comm.
Springfield, Massachusetts

Sept. 9, 1955

RUSSELL:

Russell Pond Dam: Boy Scout (Hampden County) Temporary repairs are OK.
Dam is safe until permanent ones are made.

WESTFIELD:

Parker Dam: OK

Westfield Girl Scout Dam: End washed out

Curtis Lanes Dam: Completely gone.

Springfield water works dams in Westfield:

#1 Lowest dam: OK. pond full

#2 Middle dam: OK. was topped and only downstream slope washed out.
 Pond full.

#3 Storage dam: OK. pond full

Cook dam: OK

Socony Dam: Old breach is wider - dam gone years ago.

Westfield Sportsmen's Club, Inc. dam: Washed out

John Zombick dam: All gone

CHESTER:

Hamilton Dam: Same for years. Little water ponded.

Chester W. Works Dam: OK. Was topped.

Eastman Dam: Fair shape. About the same for years.

Newell Dam: OK. Topped by 3 ft. Washed road around end of dam. Pond full.

Pierce Dam: Breached for years and no trace of spillway structure except one abutment standing on canal side.

H. C. Smity Dam: (Day Dam) Good shape. 3½ ft. plus, water over dam.

BLANDFORD:

Huntington Fire Dist. Dam: Needs attention. Pond full, but earth washed from in front of dam - pond to be maintained at low level until dam is repaired.

MONTGOMERY:

Tendal Dam: Fair shape. Pond full. Was topped very little.

SOUTHWICK:

Dr. Logie dams: (formerly Purtel & Stauble dams)

 Upper dam: Washed out.

 Lower dam: Was breached at spillway area

Piesczaka dam (E. Burr dam) abandoned for year and same condition for years

The Hon. the Board of County Comm.
Springfield, Massachusetts

Sept. 9, 1955

SOUTHWICK (CONT'D)

Kellogg Dam: Breached for years - now breach is wider.
Hatheway & Steane Dams:

Dam #1	Washed out
Dam #2	Washed out
Dam #3	OK


GRANVILLE:

Starzyk dam: OK Recommend a swale be constructed
Degana dam: OK Was topped
Roberts dam: Same for years- still small pond formed
Noble & Cooley Dams:

Diversion dam: OK. (Brook has changed its course)
Middle dam: OK., but maintenance and repairs advisable.
Lower dam: OK. Was topped and 8" water over dam proper.
Cooley Estate Dam: OK. Topped 12" water. Sand bags protected
dam proper. Small wash on road at end of dam.
Noble dam: Abandoned for years- on tributary of Japhet Brook -
was topped and a section washed out.
Steele dam: OK - was topped 1½ ft. above dam
Reinart dam: OK - was topped on low side of dam - no wash

Inspection of all dams is continuing daily. Within a day or two it is expected that the work of making a preliminary condition check of all dams in the County will be finished. More detailed inspections and conferences with Owners of dams lost or damaged in the flood will then be started.

Very truly yours


George H. McDonnell
County Hydraulic Engineer

GHM*cmb

Hampden County Dams 1956 Tighe Report



1956 Reports

Report filed May 31, 1957 by George H. McDonnell, County Hydraulic Engineer. Total dams inspected were 339. 1956 had slightly below average precipitation.

Dam	Hampden County
-----	----------------

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, INC.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

C.D. General
May 31, 1957

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

In accordance with Section 45, Chapter 253 of the General Laws of Massachusetts, the following report for the year 1956, relative to the dams of Hampden County is hereby submitted.

The precipitation in Hampden County for the year 1956 was slightly below the average rainfall as recorded over the past years. Records indicate that normally approximately 44.15 inches of precipitation have fallen each calendar year. In 1956, the total precipitation was 43.68 inches. The total precipitation as recorded by month is as follows:

<u>MONTH</u>	<u>PRECIPITATION IN INCHES</u>
Jan.	2.49
Feb.	4.32
Mar.	5.49
Apr.	4.61
May	1.24
Jun.	3.71
Jul.	3.78
Aug.	1.32
Sep.	7.10
Oct.	1.23
Nov.	3.44
Dec.	4.95
Total	43.68

The month of March experienced the second heaviest monthly precipitation for the year. Most of this precipitation was in the form of snow. In fact, during March, $38\frac{1}{2}$ inches of snow fell. This snow contained approximately 4.5 inches of water. Based upon the records maintained by the Holyoke Water Power Co., the month of March, 1956, had the highest snowfall on record. The second highest March was 40 years previously in 1916 when 36 inches of snow fell during the month of March.

In September on the late afternoon and evening of the 6th thru until 1:30 a.m. on the 7th, a heavy rainstorm occurred. During that storm, 4.31 inches of rain fell in the 9½-hour period of the storm. The heaviest part of the rain came in the late afternoon and early evening. The storm was somewhat local and though streams overflowed their banks and many lowlands were temporarily inundated, no major damage resulted to any of the dams within the county.

In the month of June, on the second and third day of the month, heavy precipitation occurred for a period of approximately 13 hours. At that time 2 inches of rain fell in the Hampden County area. Again, no damage occurred to any of the dams within the County.

The highest water of record in 1956 on the dam across the Connecticut River between Holyoke and South Hadley, occurred on May 1. At that time 9.2' of water flowed over the crest of the dam. This is a normal spring freshet condition and no flooding of serious consequence resulted. The fact that high water occurred in May was a result of the late March snow storms and the snow cover that occurred thruout the Connecticut River Valley.

All dams within Hampden County, known to the undersigned, including all discontinued structures having waterways thru and around them were inspected. All dams and dam sites where major washouts and damage occurred as a result of the 1955 flood were examined to be certain that no repairs were being made and no replacement structures were being built without first filing plans and obtaining approval of the proposed construction as prescribed by law.

During the year, individual reports have been submitted regarding the various dams in all of the communities in Hampden County. These reports contained information on each and every dam, as well as any dam site where a structure might be rebuilt for the purpose of impounding water.

A summary of the dams inspected during 1956 is as follows:

<u>COMMUNITY</u>	<u>NUMBER OF DAMS INSPECTED</u>
Agawam	12
Blandford	10
Brimfield	20
Chester	8
Chicopee	29
E. Longmeadow	4
Granville	16
Hampden	13
Holland	9
Holyoke	17
Longmeadow	2
Ludlow	16

Monson	42
Montgomery	2
Palmer	24
Russell	7
Southwick	14
Springfield	22
Tolland	11
Wales	18
Westfield	23
West Springfield	13
Wilbraham	7
Total dams and dam sites	339

The summaries of the various individual community reports are included herewith to indicate the status in general of the dams in each of the communities:

Agawam

Of the 12 dams situated in the Town of Agawam, only one dam suffered serious damage as a result of the flood of August, 1955. This dam is the Agawam Woolen Co. Dam. As of the present time no repairs have been made on this dam and a free waterway exists thru the structure. Minor damage occurred at some of the other dams, the one requiring the most attention being the Mawaga Sporting Club dam.

Blandford

There are nine dams and one dam site inspected annually in Blandford. Of these dams, one required major repairs as a result of the flood of August, 1955. All others received no damage of consequence as a result of the flood.

Long Pond Dam requires some maintenance work that should be brought to the attention of the owner.

Brimfield

There are 20 dams and dam sites in the Town of Brimfield. Nine of these locations are old dam sites that are inspected annually to be certain that a free waterway is maintained at all times. Of the 11 active dams in the Town, 2 were washed out and repaired while 3 suffered minor damage and are now in reasonably good condition. Two dams were washed out by the flood of August, 1955, and abandoned. One of these dams, the Farrer Dam, has had repair work done at the site by the replacement of the embankment for the purpose of carrying Lyman Road. The spillway has not been rebuilt but has been replaced with a large culvert. Thus, the dam is gone and no water will be ponded at this site.

Chester

Of the eight dams in Chester, only the Huntington Water Works Dam was seriously damaged by the flood of 1955. Damage to other dams, as mentioned hereinabove, was negligible.

Chicopee

Of the 29 dam sites in the City of Chicopee, 13 have either been abandoned recently by their owners or have been abandoned for many years. These 13 dam sites pond no water at the present time, but are inspected annually to be certain that persons do not restore the dams to an active condition without proper authorization. Only one County Dam in Chicopee was washed thru completely by the flood of 1955. This was the upper dam at the Oxford Golf Club. The small dam at the Fairview Sportsmen's Club was washed thru but this dam, as pointed out hereinabove, does not come under County jurisdiction. The original Bemis Pond dam was damaged sufficiently by the flood of August, 1955, to result in the drawing down of the pond behind the dam until such time as proper additions and alterations are made to this structure. All other active dams in Chicopee either suffered no damage or very minor damage during the flood.

East Longmeadow

There are four dams in East Longmeadow that come under County control. All four suffered damage in the flood of August, 1955. Three have been well and properly re-built. The fourth, owned by A. H. Dietrich, should be abandoned and breached or properly repaired.

Granville

There are sixteen dams in Granville. As a result of the flood of 1955 one dam has been washed thru and apparently abandoned, two dams suffered major damage and have been well repaired, while four dams received minor damage. Two dams that are too small to come under County jurisdiction were checked as usual. One, washed thru by the flood, has still not been replaced and the other, is still in about the same poor condition as noted in recent years.

Hampden

There are 13 dams inspected annually in Hampden. Of this number, 4 were washed out in part by the flood of August, 1955. Three of these dams have not been repaired. These are the Goodwill Dam, the LaBonte Dam and the Moriarty Dam. It is doubtful if these structures will be repaired or replaced.

Holland

There are 9 dams or dam sites in the Town of Holland. Four are simply locations of former dams that were breached many years ago and that are now inspected annually to be certain that a free waterway is maintained at these dams.

Of the remaining 5 structures, 2 received minor damage, and one, the Hamilton Reservoir Dam, received major damage.

Holyoke

Of the 17 dams and dam sites in the City of Holyoke, only two dams were washed thru in the flood of August, 1955.

One of these dams, at Bray Lake at the Mt. Tom Reservation, has since been repaired and is now in service. Substantial additional spillway capacity has been added to this structure.

The other dam, Bray Reservoir Dam, has not as yet been repaired, but plans and specifications of the repair work are being prepared and it can be expected that this structure will be in service in 1957 with a substantial increase in its spillway capacity.

One dam, the Whiting Street Reservoir Dam, has required major repairs as a result of the flood. However, the damage to the dam did not endanger the structure and the repairs that have been completed return a substantial safety factor to the hydraulic and structural stability of this dam. Damage at other structures as a result of the flood was very minor and only required normal routine maintenance.

Longmeadow

There are only two dams in the Town of Longmeadow that come under County control. Neither of these dams suffered any damage in the August, 1955, flood. When inspected in 1956 both were found to be in very good condition.

Ludlow

Of the 16 dams located in the Town of Ludlow, four were seriously damaged by the flood of 1955. Of these, three still remain unrepaired and one, the Wilbraham Paper Co. Dam, has been only temporarily repaired.

Monson

There are 42 dams and dam sites in the Town of Monson. Nine of these locations are either former dam sites at which no water was ponded prior to the flood of August, 1955, or they are sites of dams that at the present time do not come under County jurisdiction. These sites are inspected annually to be certain that at the breached dams free waterways are maintained and at the dams not coming under your jurisdiction, enlargements are not made without the approval of your Board. Seven of the dams in Monson that were washed out by the flood of August, 1955, will probably never be replaced. A number of these dams had not been used for any practical purpose for some time and they had stored very little water. Three dams that suffered major damage have either been repaired or repairs are now being made in accordance with approved plans. Two dams that suffered major damage in the flood of August, 1955, still remain breached but probably will be repaired in the near future. Four of the dams suffered minor damage that required some maintenance and repair work. All other dams were not damaged to any extent by the flood of August, 1955.

Palmer

The number of dams inspected in Palmer, including those that have been breached for some time, is twenty-four. Of this number, one dam was damaged in the flood and completely removed from the stream by the owner following the flood. Three dams received major damage and have since been repaired and are now serviceable. Two dams received major damage and have not been repaired and no longer pond water. A number of the dams suffered minor damage but ordinary maintenance and minor repair work corrected any deficiencies or storm-caused weaknesses.

Russell

There are 7 dams and 1 major dike in Russell. Only 1 dam was washed out by the flood of August, 1955. This was the small Strathmore Paper Company dam on Potash Brook. This structure has been rebuilt.

Southwick

There are a total of 14 dams and dikes in Southwick. Three of these, one dam and two dikes, are in connection with Congamond Lakes. Of these dams and dikes, five suffered serious damage. The worst casualty of all was the failure of North Pond Dike and the release of this large body of water thru the valley of Great Brook.

Springfield

There are 22 dams and dam sites within Springfield that are inspected annually. Of this number, seven are municipally owned. The dam at the Watershops Pond is in addition to the above 22.

Only one active dam other than the Watershops Pond Dam was seriously damaged in the flood of 1955. This dam, the lower Forest Park Dam, has been rebuilt. With the exception of the damage at the Bassette Pond Dam, other structures damaged were either abandoned or dilapidated and of little use.

Tolland

Of the eleven dams and dam sites in Tolland, two dams were washed thru in August, 1955, and no longer pond any water of consequence. One, Trout Pond Dam, was seriously damaged but still forms a pond, while two dams received minor damage and have been repaired in part.

Wales

Of the 18 dams and dam sites in Wales, 3 are abandoned dams that are checked annually to be certain that a free waterway is maintained thru the breached dam at all times. Of the remaining 15 dams, 1 was washed thru completely and has not as yet been repaired. This is the Norcross Dam #1. If and when this dam is repaired, the owner will file plans and specifications. Only 2 dams suffered damage of any consequence. One of these, the Shaw Dam was washed thru but the breach immediately repaired since the dam carried Laurel Hill Road. The other structure has not been repaired and it is doubtful if this dam comes under County jurisdiction. This is the Perry Dam.

Westfield

There are 23 dams and water impounding structures in Westfield taking into consideration the Park Department dike indicated as "C" above. Of this number, six have been washed out or around by the flood of 1955 and remain unrepaired as of 1956. Major repairs were completed at two dams--Chapin Dam and the Lower Stevens Paper Mill Dam--while minor repairs are either needed or have been done at other structures as indicated hereinabove.

West Springfield

In all there are thirteen dams or dam sites in West Springfield, not including some miscellaneous small structures. Of these thirteen, two were damaged by the flood of August, 1955, one of which, the Strathmore Paper Co. Dam, required major repairs.

Four dams were washed out completely. Two of these, the Fossa Dam and the Piper Reservoir Dam carried roadways. These dams have been replaced with road embankments and culverts for passing the stream flow. No water is now ponded at these two sites. A new small dam has been built upstream from the old Piper Reservoir Dam site to provide a small pond for swimming and skating purposes.

Of the other two dams destroyed, the Bear Hole Dam is being rebuilt and the Country Club Dam has been replaced with a smaller structure that does not come under County jurisdiction.

Wilbraham

There are a total of 7 dams in the Town of Wilbraham. Four of these dams were washed thru and breached by the flood of August, 1955. There is no indication, at the present time, that three of them will be repaired in the near future. However, there is an indication that the Gengreau Dam may be repaired in the near future. The owner is preparing plans and specifications to submit to your Board for review and approval or recommendations. The remaining three dams withstood the flood waters with little or no damage.

Repairs and improvements were made to many of the dams thruout Hampden County. These repairs and improvements are described in more detail in the various individual community reports submitted thruout the year.

Temporary improvements completed at the Collins Dam across the Chicopee River between Ludlow and Wilbraham remained unchanged at the close of the year. The permanent construction work has never been started by the owner and there is apparently no indication that this construction will be done in the near future. Unless the right abutment of this dam is improved in a more permanent fashion, further temporary work will probably be required within the next year.

Plans for the repair of the Sportsmen's Club Dam in Westfield were considered and then later withdrawn. This dam is still breached and impounds no water.

As of the end of the year, no permanent improvements have been started in connection with the loss of the North Dike at North Pond on Congamond Lakes in Southwick. It is expected that work will probably begin during 1957 on the permanent repairs.

The old Messer Dam in Chicopee, just upstream from Chicopee Center and a source of concern for some time, has been completely breached and the pond abandoned. A housing development is now being constructed in the general area, and it can be expected that no further ponding of water will ever take place at this site.

Dams in East Longmeadow owned by Wetstone Tobacco Corp. were rebuilt and improved and at the close of the year all of the structures were in good condition.

Work on the reconstruction of the Hamilton Reservoir dam in Holland had not been started as of the end of the year. The project had been approved by the Flood Relief Board and the preliminary studies and preliminary plan and specification preparation were being carried on with permanent construction to take place during the summer of 1957.


The new dam at Pulpit Rock Lake in Monson was reconstructed during the year. This is a masonry overflow structure constructed in the breach washed thru the earth embankment in the flood of August, 1955. At the close of the year, nearly all of the work had been completed at this dam.

Work progressed on improving and reconstructing many other of the dams thruout the County. This work has been explained in detail in the individual community reports.

The undersigned attended many of the meetings of the Connecticut Valley Water Control Association.

Numerous investigations were made and conferences were held with various owners and builders of dams and proposed dams thruout the County. Regardless of the size of a dam or the type of construction, and regardless of whether or not it came under County control, the undersigned met from time to time with owners and interested parties in connection with these structures to answer questions and advise them on construction methods and related problems.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/f

Hampden County Dams 1961 Tighe Report



1961 Reports

Report filed August 14, 1961 by George H. McDonnell, County Hydraulic Engineer. Report on structures in Montgomery & Granville sent to the Massachusetts Water Resources Commission.

City/Town	Montgomery
-----------	------------

City/Town	Granville
-----------	-----------

Dam	Winchell Dam
-----	--------------

Dam	Timbal Dam
-----	------------

Dam	Granville Reservoir Dam
-----	-------------------------

Dam	Westfield Water Works Intake Dam
-----	----------------------------------

Dam	Cooley State Dam
-----	------------------

Dam	Degano Dam
-----	------------

Name	Westfield Water Supply System
------	-------------------------------

Name	Westfield City Water
------	----------------------

Name	Hires, Herbert A
------	------------------

Streets	Blandford Road
---------	----------------

Water	Tillotson Brook
-------	-----------------

Water	Dickinson Brook
-------	-----------------

Water	Montgomery Reservoir
-------	----------------------

Water	Westfield Reservoir
-------	---------------------

Water	Moose Meadow Brook
-------	--------------------

Water	Cooley Lake
-------	-------------

aug. 15 - 61
GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

**TIGHE
& BOND**

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

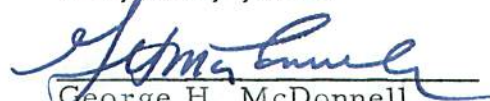
CD Gen.
Auh. 14, 1961

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Massachusetts

Gentlemen:

In connection with the request of the Water Resources Commission of the Commonwealth of Massachusetts for information regarding dams in certain communities located within Hampden County, I have sent information to Clarence I. Sterling, Jr., Director and Chief Engineer of the Commission regarding structures in the communities of Montgomery and Granville. A copy of my letter to Mr. Sterling is enclosed for your information and file purposes.

Very truly yours


George H. McDonnell
County Hydraulic Engineer

GHM/cmb
enc.

CD Gen.
Aug. 11, 1961

Commonwealth of Massachusetts
Water Resources Commission
73 Tremont Street
Boston 8, Massachusetts

Att: Clarence I. Sterling, Jr.
Director & Chief Engineer

Gentlemen:

In reference to your request for information regarding dams in Hampden County, situated within the drainage area of Westfield River, I submit the following to you on the Town of Montgomery.

There is only one dam in Montgomery of any size and it is the Water Storage Reservoir of the Westfield Water Supply System, known as the Montgomery Reservoir. It is situated on Moose Meadow Brook and is shown on the U. S. topographical map as Westfield Reservoir. The dam height is 34 ft. and the embankment length 360 ft.

The storage capacity of the reservoir is about 120 million gallons. It is used for water supply purposes. The present Owner is the Westfield Water Department, City of Westfield. The spillway elevation is approximately 918.

There is one other small dam in Montgomery known as the Timbal Dam. It is insignificant in size and is used only for personal recreational purposes.

In the Town of Granville, there are a total of 18 dams of varying size and used for many different purposes. I will list hereinafter only those large enough to be of any special consideration in connection with your work. The dams not listed are either very small structures impounding

water for process and power uses or they are for recreational, aesthetic or farm irrigation purposes.

Degano Dam

This dam is located just north of Granville Center. The pond formed is small and is situated immediately easterly of Blandford Road. The embankment of the dam carries Blandford Road itself. It is located on Trumble Brook. This dam was formerly an ice pond and belongs to the Degano family. The height of the dam is 7 ft. and the length of the embankment is 100 ft. The capacity of the pond formed by the dam is approximately 2 million gallons.

Cooley State Dam

This dam is situated in the southeast corner of Granville and forms Cooley Lake. It is shown on the U. S. topographical map. The dam is an earthen embankment 150 ft. in length and 8 ft. in height. The spillway elevation is given in the records as about 645.

County records do not indicate the quantity of water in Cooley Lake but show the surface area as in the neighborhood of 100 acres.

The present Owner is Mr. Herbert A. Hires. The lake formed is used for private aesthetic and recreational purposes.

Granville Reservoir Dam

This dam is located in the northeasterly portion of Granville. It is situated on Tillotson Brook. The dam is 840 ft. in length and 90 ft. in height. The capacity of the reservoir as contained in County records is 630 million gallons. The reservoir is a major source of water supply for the City of Westfield and is owned by that City.

Winchell Dam

This dam is located about 1,000 ft. upstream on Tillotson Brook from the confluence of this brook with Dickinson Brook. The dam is 147 ft. long and 15 ft. high. The small reservoir formed has a capacity of 3 million gallons. The reservoir is the Intake Reservoir for the Westfield Water Works System and is kept supplied with water from the Granville storage reservoir. The present Owner is the Westfield Water Department. The elevation of the spillway is given as about 410.

All of the reservoirs throughout Granville are quite small and thus are not hereinafter listed. There are a number of other municipal reservoirs owned and operated by the Westfield Water Department but these only contain water normally used for fire fighting purposes throughout the watershed areas. They do serve as catching basins to withhold sands and gravels washed down in time of heavy storm runoff.

To date this provides you with information on sizable dams in Chester, Blandford, Montgomery and Granville.

Within the next week or two I will dig out the information on dams in Agawam, Russell, Westfield and West Springfield. If I have missed any of the communities in which you desire information, please let me know. A portion of Southwick drains northerly and I assume that you may want information on that community.

Very truly yours

Tighe & Bond, Inc.

GHM/cmb

George H. McDonnell
Chief Engineer

Hampden County Dams 1966 Tighe Report



1966 Reports

Reports filed by Tighe & Bond, April - May, 1966, by George H. McDonnell, Hydraulic Engineer.
Regarding the status of various dams in Hampden County.

City/Town	Tolland
-----------	---------

City/Town	Holyoke
-----------	---------

City/Town	Southwick
-----------	-----------

City/Town	East Longmeadow
-----------	-----------------

City/Town	Brimfield
-----------	-----------

City/Town	Monson
-----------	--------

City/Town	Westfield
-----------	-----------

Dam	Dietrich Dam
-----	--------------

Dam	Haas Dam
-----	----------

Dam	Foskett Mill Stream Dam
-----	-------------------------

Dam	Little Alum Lake Dam
-----	----------------------

Dam	Preston Dam
-----	-------------

Dam	Stanley Park Dam
-----	------------------

Dam	Holyoke YMCA Dam
-----	------------------

Dam	Powder Mill Brook Dam
-----	-----------------------

Dam	Shepard Dam
-----	-------------

Dam	Peterson Dam
-----	--------------

Dam	Hampden County
-----	----------------

Dam	Springfield Water Works Dam
Dam	Hathaway-Steane Dam
Dam	Camhi Dam
Streets	Amose Case Road
Streets	Reimers Road
Streets	College Highway
Streets	Cherry Street Extn
Water	Pearl Brook

JE 33491

In your letter of Dec. 29, 1964 it was suggested that the following Dams be held open for another year:-

1. Mawaga Sporting Club, Inc., - Agawam, Mass., known as Porter Pond.
2. Quinnehtuk Co., Chicopee, Mass. - known as Dwight Dam.
3. City of Chicopee, Bemis Pond, Szot Park Dam
- *4. Victor J. Gengreau Dam- Soule Road - Wilbraham, Mass.
5. Wilbraham Paper Corp - Collins Dam - Wilbraham, Mass. your letter of 11-23-65 states still breached - no repairs - so we assume this is still open.
6. Kazimierz Florek Dam - Granville (actually in Westfield)
7. Jesse L. Rice Dam - Wilbraham.
8. City of Springfield - Lower Van Horn Park Dam - letter of 11-2-65 states debris should be removed and it would be advisable to promote a good growth of turf on the surface.
9. William Jurczyk Dam - Bumsted Rd - Monson.
10. Woodman Pond Dam - Brimfield State Forest - your letter of 11-30-65 says recommendations complied with.

* Your letter of 3-22-65 states that in your opinion Mr. Gengreau has complied with our directive.

*Mr. Gengreau will proceed on
this matter 11-12-66*

(Over)

Note: In your letter of 12-29-64 (item 10) you listed Drainage easements on Monson Rd., Wilbraham. Can you tell us what year the petition was received - we don't seem to have the case.

To: Mr. George H. Mc. Daniel - from County Commissioner

In your letter of Dec. 29, 1964 it was suggested that the following Dams be held open for another year:-

1. Mawaga Sporting Club, Inc., - Agawam, Mass., known as Porter Pond.
2. Quinnehtuk Co., Chicopee, Mass. - known as Dwight Dam.
3. City of Chicopee, Bemis Pond, Szot Park Dam
4. Victor J. Gengreau Dam - Soule Road - Wilbraham, Mass.
5. Wilbraham Paper Corp - Collins Dam - Wilbraham, Mass. your letter of 11-23-65 states still breached - no repairs - so we assume this is still open.
6. Kazimierz Florek Dam - Granville (actually in Westfield)
7. Jesse L. Rice Dam - Wilbraham.
8. City of Springfield - Lower Van Horn Park Dam - letter of 11-2-65 states debris should be removed and it would be advisable to promote a good growth of turf on the surface.
9. William Jurczyk Dam - Bumsted Rd - Monson.
10. Woodman Pond Dam - Brimfield State Forest - your letter of 11-30-65 says recommendations complied with.

* Your letter of 3-22-65 states that in your opinion Mr. Gengreau has complied with our directive.

(Over)

Note: In your letter of 12-29-64 (item 10) you listed Drainage easements on Monson Rd., Wilbraham. Can you tell us what year the petition was received - we don't seem to have the case.

In addition to those listed on the other side the following old dams are still in our open file:-

1961:-

A J. E. Shepard, Petr. - Baldwins Pond so-called on Twelve Mile Brook Reimers Rd., Monson

B City of Spfld. *June 1961*
Water Works, Petr. - changes at dam of the raw water settling basin, etc. - additions to West Parish Filters

1962:-

C Raphael Camhi, Petr. - rebuild dam on Amose Case Rd., Tolland

D *FD 1966*
Little Alum Lake Ass'n- alter spillway at said Lake, Brimfield, Mass.

E Hampden Soil Conservation District, Petrs. - construction flood water retarding structure Powdermill Brook, Westfield.

1963:-

F Staley A. Karczmarczyk - rebuild old mill dam on Foskett Mill Stream Brimfield

G Albert H. Dietrich - repairs & alteration on dam - Shaker Rd., E. Long.

H Henry W. Haas - construction of a dam structure on Pearl Brook, Southwick.

I Oscar G. Peterson - Holyoke YMCA - dam structure (replacement) Broad Brook, Cherry St. Ext., Holyoke.

1964:-

J Stanley Park Inc. - alteration to Stanley Park Dam, Gillette Pond,

K Hathaway=Steane, Corp *FD 1966*
- construct a dam on a brook located on their Farm "C" on West Side of College Highway, Southwick.

In addition to those listed on the other side the following old dams are still in our open file:-

1961:-

J. E. Shepard, Petr. - Baldwins Pond so-called on Twelve Mile Brook Reimers Rd., Monson

City of Spfld. Water Works, Petr. - changes at dam of the raw water settling basin, etc. - additions to West Parish Filters

1962:-

Raphael Camhi, Petr. - rebuild dam on Amos Case Rd., Tolland

Little Alum Lake Ass'n- alter spillway at said Lake, Brimfield, Mass.

Hampden Soil Conservation District, Petrs. - construction flood water retarding structure Powdermill Brook, Westfield.

1963:-

Staley A. Karczmarczyk - rebuild old mill dam on Foskett Mill Stream Brimfield

Albert H. Dietrich - repairs & alteration on dam - Shaker Rd., E. Long.

Henry W. Haas - construction of a dam structure on Pearl Brook, Southwick.

Oscar G. Peterson - Holyoke UMCA - dam structure (replacement) Broad Brook, Cherry St. Ext., Holyoke.

1964:-

Stanley Park Inc. - alteration to Stanley Park Dam, Gillette Pond,

Hathaway=Steane, Corp - construct a dam on a brook located on their Farm "C" on West Side of College Highway, Southwick.

*list sent to Mr. Mac Donnell
on 4-1-66*

UNFINISHED CASES - DAMS

DATE
FINISHED.

PETITIONER

TOWN OR CITY

NAME OF DAM

PETITIONER	TOWN OR CITY	NAME OF DAM
Raymond Fletcher	Southwick	Great Brook Dam
U.S. Rubber Co. Fisk Tire Plant	Chicopee Falls, Mass.	Chicopee River
Sigmund Raciborski	Springfield, Mass.	Brett Angler's Club Dam
Mawaga Sporting Club Inc.	Agawam, Mass.	Parter Pond
Quinnehtuk Company	Chicopee	Dwight Dam, Chicopee River
Chicopee, City of	Chicopee	Chicopee Falls Dam
West Springfield	West Springfield	Piper Reservoir
Ralph Carter	Hampden	Big Brook
Chicopee	Chicopee	Bemis Pond (Szot Park)
Milton Glover	Tolland	Noyes Pond Brook
Wilfred O. Worthing	Hampden	West Main Street
Victor J. Gengreau	Willbraham	Soule Road (Gengreau Pond)
Pulkit Rock Farm Inc.	Monson	S.H. Green South Dam
Monroe Paper Corp.	Willbraham	Collins Dam
Pulkit Rock Farm	Monson	Pulkit Rock Dam #1
Parks & Recreation Dept.	West Springfield	Pine Brook
Board of Water Comm.	W. Springfield	Bear Hole (Paucautuck Brook)
C.E. Church	Monson	Chicopee Brook
Arthur J. Logie, M.D.	Southwick	Whitewood Pond
Palmer Fire District #1	Palmer	Reservoir Dam
Commonwealth of Mass.	Ludlow	Alden Pond
Board of Water Comm.	Holyoke	Holyoke Water Works
Chicopee Playground Comm.	Chicopee	(Beech Hill)
Edward A. Jenson	Granville	Emile Pond Dam
Selectmen of Holland	Holland	On Abdy Brook
Kazimierz Florek	Granville	On his property
Omer E. Bradway	Monson	Hamilton Reservoir Dam
Jesse L. Rice	Willbraham	On his property
Westfield Sportsman's Club	Westfield	On his property
City of Springfield	Springfield	Flowers Brook
William M. Jurezyk	Monson	Lower Van Horn Park Dams
Dept. of Public Works	Ludlow	Dam & Spillway
Selectmen	Holland	on Sumstead Road
Strathmore Paper Co.	W. Springfield	Spillway - Alden Pond
Topper Wild Life Sanctuary	Wales (Arthur D. Norcross)	Hamilton Reservoir
Selectmen	Willbraham	Agawam River
Edouard N. Dubel	Springfield	Lower Pond (Northerly Pond)
		Drainage easements - Monson Rd.

MEMO

TIGHE & BOND, Cons. Eng'rs, Holyoke, Mass.

Job No. _____

To _____ County Commissioners Office _____

Date _____

~~While you were out~~ _____ Dams on Unfinished Case List _____

Time _____

of _____ All can be dropped except the ten (10) below _____

Tel. No. _____

Message: _____ Mawaga Sporting Club Inc. ; Quinnehtuk Co. ; Chicopee, Bemis Pond (Szot Pk) _____

_____ Victor J. Gengreau; Wilbraham Paper Co.; Kazimierz Florek; Jesse L. Rice; _____

_____ City of Springfield, Lower Van Horn Park Dam; William M. Jurczyk; _____

_____ Selectmen, Wilbraham, Drainage Easements _____

Signed _____ Geo. McDonnell _____

Disposition: _____

Signed _____

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD General
April 12, 1966

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Reference is made to the request for information relative to the status of certain dams in the County. I am enclosing herewith a photocopy of one page of a listing of dams sent to me and comments regarding each of the dams are as follows.

✓ Item #1, Mawaga Sporting Club, Inc. - The status of this dam has not changed. As of my last inspection at the dam and as of a telephone conference with a member of the Club this past Fall, no work has been done relative to the new spillway construction.

make file
Item #2, Quinnehtuk Co. - This case is one wherein the Quinnehtuk Co. petitioned the County Commissioners on April 1, 1947 for permission to change flashboards on the Dwight Dam on the Chicopee River. Communications following the original request together with the filing of approved drawings resulted in the issuance of an Interlocutory Decree on April 30, 1947 approving the flashboards. The flashboards have been satisfactory over the years and, it is recommended that the flashboards as approved and installed be accepted. If you do not have copies of the Decree and correspondence on this case in your file, I have found them in a dead file on Chicopee County Dams here at the office and will send photocopies to you.

✓ Item #3, Bemis Pond Dam, City of Chicopee - No new information has been obtained on this dam during the past year. Since the dam is inactive and receives little maintenance or attention, it is recommended that no action be taken in connection with acceptance of the structure at this time. It should be carried as an open case for at least another year.

*Discontinued
5-11-66
letter
written
Mr. Gengreau*

Item #4, Victor Gengreau Dam, Soule Road, Wilbraham - Mr. Gengreau has complied with the latest directive issued by your Board in that the dam has been breached. A Decree was issued allowing Mr. Gengreau to rebuild his dam in accordance with approved filed plans and specifications. It was during the construction of the dam that the undersigned noted Mr. Gengreau was not building the dam in accordance with the plans and specifications and recommended to your Honorable Board that the owner be directed to breach the newly constructed dam. The owner has breached the dam and no water is now ponded by the structure. The owner apparently will not rebuild the dam and it would seem advisable to discharge the Interlocutory Decree issued for rebuilding of the dam and to notify Mr. Gengreau that the dam cannot be rebuilt, under any conditions, until new plans and specifications are filed with your Board.

*Discontinued
5-11-66*

Item #5, Wilbraham Paper Corp. - This dam in Wilbraham has never been repaired and, for all practical purposes, it can be considered abandoned and no longer a dam on the records in Hampden County.

Item #6, Florek Dam, Granville, but Actually in Westfield - Mr. Florek, as of this past year, had not started the construction of his dam. I do not know if he will ever build the dam. However, construction materials still are at the site and have been at the site for the past five years or more.

Item #7, Jesse L. Rice Dam in Wilbraham - This dam was finally constructed this past year. It should remain as an open case for one more year while the undersigned has an opportunity to inspect it following one year of operation to learn whether or not there is any need for additions or alterations.

*(6)
See
report
5-11-66*

Item #8, Lower Van Horn Park Dam - This matter is one reported at the time of the annual inspection of the dam in 1965. The undersigned has not returned to the dam to make a reinspection as yet. Normally, reinspections of dams have been made in the past. However, with the major cut in the budget for inspection of dams, it has been pointed out to your Board in various communications, that there is barely enough money now available to carry on the routine inspections. The Massachusetts Legislature has not provided your Board with funds sufficient to cover reinspections of dams.

Item #9, William Jurczyk Dam, Monson - As of the last inspection, Mr. Jurczyk had not as yet corrected the freeboard height of this dam. He keeps promising to do it but as of the last inspection, the work had

**TIGHE
& BOND CONSULTING ENGINEERS**

-3-

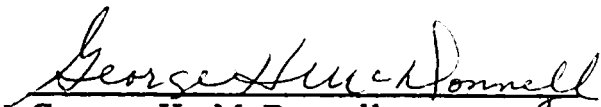
not been done. A reinspection of the dam will be made in 1966 and if Mr. Jurczyk has not corrected the conditions at the dam, it will be recommended to your Board that he be ordered to draw down the pond and keep the pond drawn down until the work is done.

Item #10, Woodman Pond Dam, Brimfield State Forest - Conditions at this dam are now satisfactory and all recommendations have been complied with. It is recommended that the dam be accepted by your Honorable Board.

At the bottom of the page of notes, photocopy enclosed herewith, you refer to the drainage easements on Monson Road in Wilbraham. This was Item #10 in my letter of December 29, 1964. Nowhere in my records have I been able to find out anything about these drainage easements. If there is any correspondence or any sort of a Decree in County records relative to these easements, please send me photocopies and I will trace these thru the Highway Supt. and the Town Engineer of Wilbraham.

The above information completes my comments on the various items contained on one side of the page of notes sent to me. I will shortly review the various items on the other side of the page of notes and will send you a communication with my comments. The cases discussed hereinabove are all listed on the photocopy of the sheet sent to me and attached hereto.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/mbf

Enc.

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD General
May 2, 1966

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Reference is made to the list of dams sent to me relative to cases still open, a copy of the list is attached hereto. I have designated each dam with a code letter and will refer to the dams hereinafter by the reference code letter.

Item A, the Shepard Dam on Reimers Road in Monson - This dam has been rebuilt in accordance with the filed plans and specifications. However, the owner has not complied with one directive regarding the placing of heavy stones along the emergency spillway to act as a highway guard rail. In various communications since 1961, the owner has been advised that the stones will interfere with storm water overflow. It has been recommended that the stones be replaced with a standard type guard rail fence. Also, at an area of the dam embankment adjacent to the spillway bridge, leakage has occurred twice since the dam was reconstructed. Mr. Shepard was directed to repair the leakage and, insofar as I know, action was taken in connection with this matter during 1965. I plan to inspect this dam during the Summer of 1966 at which time I will determine its condition and make a recommendation as to whether or not it should be accepted.

①
Discharge
204
Item B, City of Springfield Water Works Dam, changes at the raw water settling basin - At the last time I discussed this matter with the Chief Engineer of the Springfield Water Works, it had been decided by the Water Works not to make the changes as included in the plans and specifications filed. In view of this fact, it would be my recommendation that the petition be discharged and the filed plans and specifications cancelled or returned to the owner.

Write (2) no directed 9-24 file all in

Item C, Camhi Dam on Amose Case Road in Tolland - Absolutely no work has been done on this dam as of the time of the last inspection conducted in 1965. This is the dam indicated under the letter I and carried in the records as Preston Dam in my letter-report of September 22, 1965. It would seem advisable to contact the petitioner at his address on the letter of petition and request a statement from him as to whether or not he intends to proceed with the dam construction. If he has abandoned the project, then the project should be considered closed and the petition discharged.

✓ Item D, Little Alum Lake Association - I am enclosing herewith a letter of recommendation regarding the acceptance of this altered structure.

Keep open for 1 yr

Item E, the Flood Water Retarding Structure on Powder Mill Brook in Westfield - Work on this project was just completed during the past year. It will be necessary that this project operate for at least another year before a recommendation for acceptance can be forwarded. This project should be kept open on the records until at least the end of this present year and following an inspection that I will make in the Fall.

Call within 1 week Lake Assoc

Item F, Foskett Mill Stream Dam in Brimfield - At the time of my last inspection at this dam, the structure had badly deteriorated and there was no evidence in the field that the owner intended to rebuild the dam. A recommended communication is enclosed herewith on County stationery for forwarding if you agree with its contents. *not here*

✓ Item G, Dietrich Dam, East Longmeadow - This dam was found to be in satisfactory condition at the time of the last inspection and a letter of recommendation regarding its acceptance is enclosed herewith.

Keep open

✓ Item H, Haas Dam on Pearl Brook in Southwick - At the time I last discussed this dam with representatives of the Soil Conservation Commission, the owner had not as yet begun construction. He apparently intends to construct the dam but has not as yet done any work on the structure.

Keep open

✓ Item I, Peterson, Holyoke YMCA dam on Cherry Street Extension - Work is still going on at this dam and it is expected that the structure will be ready for final inspection during the present year. A report will be made on the dam when the inspection is conducted.

**TIGHE
& BOND** CONSULTING ENGINEERS

-3-

✓ Item J, Stanley Park, Inc. - This dam was constructed a year ago and, based upon the usual procedure, when I make my inspection of the structure this year, I will send a recommendation for acceptance if it is in satisfactory condition.

✓ Item K, Hathaway-Steane Corp. Dam on west side of College Highway, Southwick - This dam was completed in 1965. Some work remained to be done relative to loaming and seeding and stabilization. The structure will be inspected in 1966 and if found satisfactory, a recommendation will then be made regarding its acceptance.

Respectfully submitted,



George H. McDonnell

County Hydraulic Engineer

GHM/mbf

Hampden County Dams 1967 Tighe Report



1967 Reports

Report filed by Tighe & Bond, March 31, 1967, by George H. McDonnell, Hydraulic Engineer. This is a complete listing of all dams in Hampden County inspected on a routine basis.

Dam	Hampden County
-----	----------------

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

List of Dams

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD General
March 31, 1967

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

As per the request of your office, we are sending herewith a list of all of the dams within the County inspected by the undersigned on a routine basis. Reports on these dams are submitted to you periodically and, in accordance with the requirements of the General Law, each dam is inspected at least once every two years.

You will note that on the listing, we have shown the dams by owners and, for example, under the heading of Chicopee on Page 2, there are actually three dams under item 7 while under item 10 there are two dams. Each dam is reported upon separately and if your filing system is by owners, then the files would be set up in accordance with the names and numbering shown on the attached sheets. In order to have the enclosed list coincide exactly with the tabulation in the annual report, it would then be necessary to consider each of the dams under item 7 and 10 of Chicopee as separate dams with the result that 14 dams exist within that City. The same applies to the other communities where more than one dam is listed under the heading of a single owner.

If there is any other information needed, please let me know.

Very truly yours,

George H. McDonnell
George H. McDonnell
County Hydraulic Engineer

GHM/mbf

Enclosure



TIGHE & BOND CONSULTING ENGINEERS

List of every dam in Hampden County inspected by the County Hydraulic Engineer.

AGAWAM, MASS.

1. Gogulski Dam
2. Rising Dam
3. DiDonato Dam (West Springfield Fish & Game Club)
4. Zerra Dam
5. Provost Dam
6. P. Korsen Dam - Lower (Now E. V. Hall)
7. Silver Lake Dam
8. Agawam Woolen Company Dam
9. Mawaga Dam
10. Robinson Park Dam

BLANDFORD, MASS.

1. Borden Brook Reservoir Dam, Springfield Water Dept.
2. Cobble Mountain Dam, Springfield Water Works
3. Brown Dam
4. Fowler Dam
5. Dunlap Dam
6. Peck Lumber Co. Dam
7. Long Pond Dam
8. Blair Dam

BRIMFIELD, MASS.

1. Boys' Club Dam
2. G. S. Macallister Dam (Little Alum Pond Dam)
3. W. D. Cheney Dam
4. Morgan Dam
5. J. R. Smith Dam
6. Wheeler Dam
7. Dearth Hill Pond (Brimfield State Forest, Mass. Dept. of Conservation)
8. Woodman Pond Dam (Brimfield State Forest, Mass. Dept. of Conservation)
9. Humpage Dam
10. Kaplinger Dam (Now Butler)
11. Dean Pond Dam (Brimfield State Forest, Mass. Dept. of Conservation)
12. Maple Lake Arms Dam
13. Lake Sherman Outlet

CHESTER, MASS.

1. Chester Water Works Dam
2. Huntington Water Works Dam
3. Chester State Forest Boulder Park Dam
4. Homer E. Newell Dam
5. Hugh C. Smith Dam (Now Ideal Lodge)

CHICOPEE, MASS.

1. Fairview Fish & Game Club Dams
2. Roberts Pond Dam
3. Hampden Brewing Company Dam
4. Veterans of Foreign War Dam
5. City of Chicopee Dam
6. L. Slate Dam
7. Chicopee Water Dept. Dams (Now Mass. Dept. of Natural Resources)
 - Upper Dam
 - Middle Dam
 - Lower Dam
8. Fortier Dam
9. Dwight Dam
10. Bemis Pond Dams
 - Upper Dam
 - Lower Dam
11. Oxford Country Club Dam

EAST LONGMEADOW, MASS.

1. Forest Park Dairy Dam (A. H. Dietrich)
2. Wetstone Tobacco Co. Dams
 - Dam #1 at Denslow Road
 - Dam #2 on Freshwater Brook
 - Dam #3 on Jawbuck Brook

GRANVILLE, MASS.

1. DeGano Dam
2. Phelon Dam
3. Woodger Dam

✓ GRANVILLE, MASS. Continued

4. Noble-Cooley Drum Shop Dams
Upper Dam
Small Dam Below Mill
5. Dickinson Dam
6. Don Noble Dam
7. Cooley Estate Dam
8. Westfield Water Department Dams
Arnold Dam
Wells Mills Dam
Strong Dam
Granville Reservoir Dam
Winchell Dam
Japhet Dam
9. Granville State Forest Dam
10. E. A. Jensen Dam

✓ HAMPDEN, MASS.

1. Sazama Dam
2. Goodwill Dam
3. Rockwell Dam
4. Peterson Dam
5. Stalker Dam
6. LaBonte Dam
7. Worthing Dam (Now Gordon)
8. Gleason Dam (Formerly Koncitik)
9. Kibbee Dam
10. Driscoll Dam
11. Chaffin Dam & Dike

✓ HOLLAND, MASS.

1. Holland Rod & Gun Club Upper Dam
2. Holland Rod & Gun Club Lower Dam
3. Hamilton Reservoir Dam
4. Domaingue Dam
5. Stevens Brook Dam

✓ HOLYOKE, MASS.

1. Holyoke Water Power Company Dam
2. Schaeffer Dam
3. Lake Bray Dam
4. Whiting Street Reservoir Dam - Holyoke Water Works
5. Whiting Street Intake Dam - Holyoke Water Works
6. William Skinner Dams
Upper Dam
Lower Dam
7. McLean Reservoir Dam - Holyoke Water Works
8. Bray Reservoir Dam - Holyoke Water Works
9. Ashley Pond Dam - Holyoke Water Works
10. Zenner Dam (Now YMCA)

✓ LONGMEADOW, MASS.

1. Turner Park Dam
2. Longmeadow Country Club Dam

✓ LUDLOW, MASS.

1. Newcomb Dam
2. Ludlow Mfg. Associates Dam (Red Bridge) (Now Western Mass. Electric)
3. Collins Dam (Now Alchar-Wilbraham Corp.)
4. Gauthier Upper Dam
5. Alden Dam
6. Ludlow Park Dept. Dam (Now Ludlow School Dept.)
7. Ackerman Lower Dam
8. Ackerman Upper Dam
9. Springfield Water Works Dam
10. Reynolds Dam
11. Ludlow Mfg. Associates Dam (Now Western Mass. Electric)
12. Western Mass. Electric Co. Dam
13. Block Dam (Now Rozkuszka)
14. Carver Dam

✓ MONSON, MASS.

1. Overlook Farm Dam
2. Church Manufacturing Co. Dam
3. Moulton-Chicopee Brook Dam

✓ MONSON, MASS. Continued

4. Anderson Dam
5. White Pool Dam
6. Ellis Mills Upper Dam
7. Monson Associates Dam
8. Monson Water Works Dam
9. R. S. Sutcliffe Dam and Dike
10. Smith Pond Dam
11. Aldrich Dam
12. C. P. Bradway Dams
 - Lower Dam
 - Upper Dam
13. W. R. Elliot Dam
14. Springfield Sportsmens' Club Dam
15. Bumstead Dam
16. Jurczyk Lower Dam
17. Jurczyk Upper Dam
18. Paradise Lake Dam
19. Phillips Dam
20. Reynolds Dam
21. Liscek Dams
 - Lower Dam
 - Upper Dam
22. Dr. M. Schimmel Dam (Formerly Brown Dam)
23. Warren Platt, Jr. Dam (Now Ricci)
24. Pulpit Rock Pond Dams
 - New Concrete Dam
 - West Dam
 - Small Dam
25. Dr. Mace Dam
26. Shepard Dams (Formerly Dr. Sanderson Dams)
 - Upper Dam
 - Lower Dam
27. Lunden Dam
28. O. E. Bradway Dam
29. Dr. J. V. Greany Dam
30. Conant Brook Flood Control Dam

✓ MONTGOMERY, MASS.

1. Westfield Reservoir Dam
2. E. Timball Dam

PALMER, MASS.

1. V. V. McNitt Dam
2. Hickson Paper Co. Dams
Lower Dam
Middle Dam
Upper Dam
3. Palmer Fire District #1 Upper Dam
4. Palmer Fire District #1 Lower Dam
5. Holbrook Pool Dam
6. Holbrook Pool Upper Dam
7. Mongo Dam
8. Thorndike Fire and Water District Dams
Upper Dam
Lower Dam
9. Lake Thompson Dam
10. Lions Club Dam
11. State Fish Hatchery Dams
Upper Dam
Lower Dam
12. Forest Lake Dam
13. Duda Dam
14. Textile Printing Co. Upper Dam
15. Textile Printing Co. Lower Dam
16. Self-Locking Carton Co. Upper Dam
17. Self-Locking Carton Co. Lower Dam
18. Sasur Dam
19. Lizak Dam

RUSSELL, MASS.

1. Russell Water Works Dam
2. Russell Pond Dam
3. Strathmore Paper Co. Potash Brook Dam
4. Strathmore Paper Co. Dam - 1938 Structure
5. Strathmore Paper Co. Dam - 1950 Structure
6. Strathmore Paper Co. Dike
7. Texon, Inc. Dam
8. Westfield River Paper Co. Dam

✓ SOUTHWICK, MASS.

1. Kellogg Dam
2. Irving Kimball Dam (Formerly Dr. Logie Lower Dam)
3. Dr. Logie Upper Dam
4. Ahrens Dam
5. Fletcher Dam (Congamond Lakes South Dike)
6. Fletcher Dam (Congamond Lakes Outlet)
7. Congamond Lakes North Dike
8. Fletcher Dam on Great Brook
9. Hathaway & Steane Co. Dam #1
10. Hathaway & Steane Co. Dam #2
11. Hathaway & Steane Co. Dam #3
12. Hathaway & Steane Co. Farm Pond Dam
13. Basil Tysz Dam
14. General Cigar Corporation Lower Dam
15. General Cigar Corporation Upper Dam
16. Lake George Sportsmens' Club Dams

✓ SPRINGFIELD, MASS.

1. Forest Park Lower Dam
2. Forest Park Middle Dam
3. Forest Park Upper Dam
4. U. S. Government Dam at Watershops Pond
5. Springfield Park Dept. Dam - Sixteen Acres Pond
6. Springfield Park Dept. Dam - Breckwood Park
7. Monsanto Chemical Co. Upper Dam
8. Monsanto Chemical Co. Lower Dam
9. Van Horn Park Upper Dam
10. Van Horn Park Lower Dam
11. Bay State Plumbing & Heating Supply Co. Dam

✓ TOLLAND, MASS.

1. Richmond Dam (Connecticut Valley Girl Scouts, Inc.)
2. H. E. Newell Dam
3. Lost Wilderness Dam
4. Camp Spruce Hill Dam (Victory Lake)
5. Noyes Pond Dam
6. Tunxis Club New Dam at Penstock Site
7. Tunxis Club New Trout Pond Dam
8. Tunxis Trout Pond Dam
9. Preston Dam
10. Chamonix Chalet Properties, Inc. Dam

✓ WALES, MASS.

1. Lake George Dam
2. Squires Dam (Now Morgan)
3. D. S. Maynard Dam
4. Shaw Dam
5. Wales Woolen Company Dam
6. Sagalyn Dam (Now Town of Wales)
7. Zabawa Dam
8. Norcross Dams
 - Dam No. 1
 - Dam No. 2
 - Dam No. 3
 - Dam No. 4
 - Pond Hole Dam
 - Vinica Pond Dam
 - Trout Pond Dam

✓ WESTFIELD, MASS.

1. Horse Pond Dam, Westfield Department of Public Works
2. Chapin Pond Dam, Westfield Department of Public Works
3. Westfield Park Department - Upper Dam
4. Westfield Park Department - Lower Dam (Sandy Mill Brook Dam)
5. Westfield Sportsmen's Club Dam
6. Tekoa Dam - Westfield Water Department
7. A. H. Wilgus Dam
8. Stevens Paper Company - Lower Dam
9. Stevens Paper Company - Upper Dam
10. Springfield Water Works Intake Dam
11. West Parish Filter Dam #1 (Lower) Springfield Water Works
12. West Parish Filter Dam #2 (Middle) Springfield Water Works
13. West Parish Filter Dam #3 (Upper) Springfield Water Works
14. Howard Smith Dam
15. Stanley Park Dam
16. Florek Dam
17. Pieczarka Realty Inc. Dam (Now J. G. Kulper)
18. Arm Brook Dam
19. Powder Mill Brook Dam
20. Milton Berman Dam on Munn Brook

WEST SPRINGFIELD, MASS.

1. Strathmore Paper Co. Dam
2. Mittineague Park Dams
Upper Dam
Lower Dam
3. Country Club Dam
4. Lyncosky Dams
Upper Dam
Lower Dam
5. Piper Reservoir Dam (New Swimming Pool Dam)
6. Bear Hole Dam

WILBRAHAM, MASS.

1. Collins Manufacturing Co. Dam (Now Alchar-Wilbraham Corp.)
2. Dr. Sullivan Dam (Now Owned by Donald V. Guidette)
3. Rice Dam
4. Gengreau Dam
5. Y.M.H.A. Dam
6. Green Acres Fruit Farm Dam

Hampden County Dams 1970 Tighe Report



1970 Reports

List of all dams, with last known owners, in the 23 cities and towns in Hampden County.
Approximate date: 1970. It is believed that this is the final listing given over to the Commonwealth when the state assumed responsibility for inspections of all dams.

State Fish Hatchery Dam - Upper Dam

West Parish Filter Dam #3 - Upper

Lake Bray Dam

Norcross Dam #2

State Fish Hatchery Dam - Lower Dam

Smith, Howard, Dam

Stanley Park Dam

Florek Dam

Arm Brook Dam

Powder Mill Brook Dam

Springfield Water Works Intake Dam

West Parish Filter Dam #1 - Lower

Guidette Dam

Piper Reservoir Dam

Noyes Pond Dam

Green Acres Fruit Farm Dam

Tunxis Club New Dam - Penstock Site

Stevens Paper Co - Upper Dam

Gordon Dam fka Worthing Dam

Stevens Paper Co - Lower Dam

Driscoll Dam

Stalker Dam

Hamilton Reservoir Dam

Terry Dam, fka Peterson Dam

Rockwell Dam

Sazama Dam

Jensen, E A, Dam

Granville State Forest Dam

Japhet Dam

Woodman Pond Dam

Y M H A Dam

Lyncosky Dam - Upper Dam

Strathmore Paper Co Dam

Brown Dam (Hayden Pond)

Granville Reservoir Dam

Silver Lake Dam

Wheeler Dam

Cheney, W D, Dam

Macallister, W D, Dam aka Little Alum Pond Dam

Boys' Club Dam

Long Pond Dam

Dunlap Dam (inactive)

Dearth Hill Pond Dam

Shaw Dam

Camp Spruce Hill Dam - Victory Lake

Lyncosky Dam - Lower Dam

Skinner, William, Lower Dam

Country Club Dam

Wales Fish & Gun Club Dam

Vinca Pond Dam

Norcross Dam #4

Norcross Dam #3

Bear Hole Dam

Norcross Dam #1

Horse Pond Dam

Morgan Dam fka Squires Dam

George Lake Dam

Chamonix Chalet Properties Inc Dam

Tunxis Trout Pond Dam

Tunxis Club New Trout Pond Dam

Lost Wilderness Dam

Springfield Sportsmen's Club Dam

Gleason Dam fka Koncitik Dam

Thorndike Fire & Water District Dam - Lower Dam

Thompson Lake Dam

Lunden Dam

Carver Dam

Ashley Pond Dam

Zenner Dam

Turner Park Dam

Longmeadow Country Club Dam

Western Massachusetts Electric Co Dam fka Red Bridge Dam fka Ludlow Manufacturing Associates Dam

Winchell Dam

Gauthier Dam

Mongo Dam

Springfield Water Works Dam

Palmer Fire District No. 2 - Lower Dam

Rozkuszka Dam aka Block Dam

Bradway, C P, Dam

Church Manufacturing Co Dam

Moulton Dam

Anderson Dam

Zero Manufacturing Co Dam

Monson Associates Dam

Monson Water Works Dam

Sutcliffe, R S, Dam & Dike

Smith Pond Dam

Bray Reservoir Dam

Ludlow Manufacturing Associates Dam aka Western Massachusetts Electric Co Dam

Huntington Water Works Dam

Ackerman Dam

Jurczyk Upper Dam

Holyoke Water Power Co Dam

Skinner, William, Upper Dam

Schaeffer Dam

Whiting Street Reservoir Dam

Alden Dam

Kibbee Dam

McLean Reservoir Dam

Chaffin Dam

Chaffin Dike

Holland Rod & Gun Club - Upper Dam

Holland Rod & Gun Club - Lower Dam

LaBonte Dam

Thorndike Fire & Water District Dam - Upper Dam

Jurczyk Lower Dam

Dean Pond Dam

Paradise Lake Dam

Schimmel, M, Dam fka Brown Dam

Pulpit Rock Dam - New Concrete Dam

Pulpit Rock Dam - West Dam

Pulpit Rock Dam - Small Dam

Shepard Upper Dam

Collins Dam

Bradway, O E, Dam

Aldrich Dam

Westfield Reservoir Dam

Timball, E, Dam

McNitt, V V, Dam

Palmer Fire District No. 1 - Upper Dam

Conant Brook Flood Dam

Ahrens Dam

Logie Dam

Forest Park Lower Dam

Congamond Lakes North Dike

General Cigar Corp - Lower Dam

Tysz, Basil, Dam

Hathaway & Steane Co Farm Pond Dam (behind barn & farmhouse)

Hathaway & Steane Co Dam #2 (on Slab Brook)

Hathaway & Steane Co Dam #1 (on Slab Brook)

Newell, H E, Dam

Forest Park Middle Dam

DiDonato Dam

Textile Printing Co Upper Dam

Springfield Park Department Dam - Sixteen Acres Pond

Sasur Dam

Trout Pond Dam

Chapin Pond Dam

Tekoa Dam

West Parish Filter Dam #2 - Middle

Rising Dam

Newell, Homer E, Dam

Provost Dam

Westfield River Paper Co Dam

Chester Water Works Dam

Kimball, Irving, Dam

Textile Printing Co Lower Dam

Texon Inc Dam

Rice Dam

Strathmore Paper Co Dike

Congamond Lakes Outlet

Lizak Dam aka Campers Country Club Dam

Congamond Lakes South Dike

Diamond National Corp Lower Dam

Strathmore Paper Co Dam - 1938 Structure

Strathmore Paper Co Dam - Potash Brook Dam

Russell Pond Dam

Forest Park Upper Dam

Diamond National Corp Upper Dam

U S Government Dam at Watershops Pond

Forest Lake Dam

Strathmore Paper Co Dam - 1950 Structure

General Cigar Corp - Upper Dam

Richmond Dam

Bay State Plumbing & Heating Supply Co Dam

Van Horn Park - Lower Dam

Van Horn Park - Upper Dam

Monsanto Chemical Co - Lower Dam

Monsanto Chemical Co - Upper Dam

Springfield Park Department Dam - Breckwood Park

Lake Sherman Outlet

Russell Water Works Dam

Borden Brook Reservoir Dam

Dwight Dam

Cooley Brook Park Dam, Massachusetts Comm Natural Resources, Toe Dam

Cooley Brook Park Dam, Massachusetts Comm Natural Resources, Upper Dam

Chicopee City Dam, Chicopee Falls

Maple Lake Arms Dam

Ideal Lodge Dam, fka Smith, Hugh C, Dam

West Springfield Fish & Game Club Dam

Bemis Pond Dam, Upper, Szot Park

Don Noble Dam

Roberts Pond Dam

Robinson Park Dam

Mawaga Dam

Wetstone Tobacco Co Dam #1 on Jawbuck Brook

Fowler Dam (very small dam)

Peck Lumber Company Dam

Cooley Estate Dam

Strong Dam

Westfield Sportsmen's Club Dam

Cobble Mountain Dam

Phelon Dam

Oxford Country Club Dam

Zerra Dam

Dickinson Dam

Noble Cooley Drum Shop Dam

Woodger Dam

Wetstone Tobacco Co Dam #1 at Deslow Road

DeGano Dam

Bemis Pond Dam, Lower, Szot Park

Boulder Park Dam, Chester State Forest

Wetstone Tobacco Co Dam #2 on Freshwater Brook

Forest Park Dairy Dam fka Dietrich, A H, Dam

City/Town Monson

City/Town Montgomery

City/Town Wilbraham

City/Town Blandford

City/Town Ludlow

City/Town Westfield

City/Town Hampden

City/Town Palmer

City/Town Holland

City/Town Agawam

City/Town Granville

City/Town West Springfield

City/Town	Wales
City/Town	Tolland
City/Town	Springfield
City/Town	Chicopee
City/Town	Brimfield
City/Town	East Longmeadow
City/Town	Holyoke
City/Town	Chester
City/Town	Southwick
City/Town	Longmeadow
City/Town	Russell
Dam	Hampden County
Dam	Gogulski Dam

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

AGAWAM

1. Gogulski Dam (Harts Pond)

Mr. Charles F. Gogulski, 33 Barry St., Agawam, Mass.

2. Rising Dam (Leonard Pond)

Town of Agawam, Town Office, Agawam, Mass.

3. DiDonato Dam

West Springfield Turnverein, Garden Street, Agawam, Mass.

4. Zerra Dam

Mr. Salvatore Zerra, 223 Garden Street, Feeding Hills, Agawam, Mass.

5. Provost Dam

Mr. P. Provost, 227 Garden Street, Agawam, Mass.

6. West Springfield Fish and Game Club Dam

West Springfield Fish and Game Club, 329 Garden St., Agawam, Mass.

7. Silver Lake Dam

Mr. Kenneth Hinshaw, 32 Gunn-Geary Lane, Agawam, Mass.

8. Mawaga Dam

Mawaga Sportsmen's Club, Adams Street, Agawam, Mass.

9. Robinson Park Dam

The Commonwealth of Massachusetts, Dept. of Natural Resources,
Robinson State Park, North Street, Agawam, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

BLANDFORD

1. Borden Brook Reservoir Dam

Springfield Water Works, City Hall, Springfield, Mass.

2. Cobble Mountain Dam

Springfield Water Works, City Hall, Springfield, Mass.

3. Brown Dam (Hayden Pond)

Springfield Water Works, City Hall, Springfield, Mass.

4. Fowler Dam (very small dam)

Mr. George B. Fowler, Fowler Hill Farm, Blandford, Mass.

5. Peck Lumber Company Dam

Peck Lumber Company, South Broad Street, Westfield, Mass.

6. Dunlap Dam (dam is inactive but can be restored easily)

Loring Lane, Blandford, Mass. (1960) Ownership may have changed.

7. Long Pond Dam

Springfield Water Works, City Hall, Springfield, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

BRIMFIELD

1. Boys' Club Dam

Springfield Boys' Club, Springfield, Mass.

2. G. S. Macallister Dam (Little Alum Pond Dam)

Little Alum Lake Assoc., Inc., Little Alum Lake, Brimfield, Mass.

3. W. D. Cheney Dam

Mr. W. D. Cheney, Apple Road, Brimfield, Mass.

4. Wheeler Dam

Town of Brimfield, Mass.

5. Dearth Hill Pond Dam

The Commonwealth of Massachusetts, Dept. of Conservation,
Brimfield State Forest, Brimfield, Mass.

6. Woodman Pond Dam

The Commonwealth of Massachusetts, Dept. of Conservation,
Brimfield State Forest, Brimfield, Mass.

7. Dean Pond Dam

The Commonwealth of Massachusetts, Dept. of Conservation,
Brimfield State Forest, Brimfield, Mass.

8. Maple Lake Arms Dam

Mr. Stanley Karczmarczyk, Maple Lake Arms, Old Brimfield Road,
Palmer, Mass.

9. Lake Sherman Outlet

Town of Brimfield, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

CHESTER

1. Chester Water Works Dam

Board of Water Commissioners, Chester Water Dept., Chester, Mass.

2. Huntington Water Works Dam

Board of Water Commissioners, Huntington Fire District,
Huntington, Mass.

3. Chester State Forest, Boulder Park Dam

The Commonwealth of Massachusetts, Dept. of Conservation,
Chester State Forest, Chester, Mass.

4. Homer E. Newell Dam

Newell is the name of record. However, I believe there is a new
owner. House is a short distance from the dam.

5. Hugh C. Smith Dam (now Ideal Lodge)

The Ideal Lodge, North Chester, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

CHICOPEE

1. Roberts Pond Dam

Mr. Chester A. Nowak, Mt. Lake Resort, 301 Irene St., Chicopee, Mass.

2. City of Chicopee Dam (Chicopee Falls)

City of Chicopee, Dept. of Engineering, City Hall, Chicopee, Mass.

3. Mass. Dept. of Natural Resources Dam - Upper Dam

Mass. Dept. of Natural Resources, Cooley Brook Park, Chicopee, Mass.

4. Mass. Dept. of Natural Resources Dam - Toe Dam

Mass. Dept. of Natural Resources, Cooley Brook Park, Chicopee, Mass.

5. Dwight Dam

Western Mass. Electric Co., West Springfield, Mass.

6. Szot Park - Bemis Pond Upper Dam

City of Chicopee, Dept. of Engineering, City Hall, Chicopee, Mass.

7. Szot Park - Bemis Pond Lower Dam

City of Chicopee, Dept. of Engineering, City Hall, Chicopee, Mass.

8. Oxford Country Club Dam

Oxford Country Club, 651 East Main St., Chicopee, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

EAST LONGMEADOW

1. Forest Park Dairy Dam (A. H. Dietrich)

Mr. Albert H. Dietrich, 343 Shaker Road, East Longmeadow, Mass.

2. Wetstone Tobacco Company Dam #1 at Denslaw Road

Wetstone Tobacco Co., 521 Shaker Road, East Longmeadow, Mass.

3. Wetstone Tobacco Company Dam #2 on Freshwater Brook

Wetstone Tobacco Co., 521 Shaker Road, East Longmeadow, Mass.

4. Wetstone Tobacco Company Dam #3 on Jawbuck Brook

Wetstone Tobacco Co., 521 Shaker Road, East Longmeadow, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

GRANVILLE

1. DeGano Dam

Town of Granville, since Blandford Road, a public street, forms the dam.

2. Phelon Dam

Mr. Russell Phelon, Granville, Mass.

3. Woodger Dam

Mr. G. E. Woodger, Granville, Mass.

4. Noble Cooley Drum Shop Dam

Noble Cooley Drum Shop, Granville, Mass.

5. Dickinson Dam

Mr. Glenn Dickinson, Sodom Road, Granville, Mass.

6. Don Noble Dam

Mr. Donald E. Noble, Maple St., Granville, Mass.

7. Cooley Estate Dam

Mr. Herbert A. Hires, Pine Lake, Granville, Mass.

8. Strong Dam

Westfield Water Dept., Municipal Building, Westfield, Mass.

9. Granville Reservoir Dam

Westfield Water Dept., Municipal Building, Westfield, Mass.

10. Winchell Dam

Westfield Water Dept., Municipal Building, Westfield, Mass.

11. Japhet Dam

Westfield Water Dept., Municipal Building, Westfield, Mass.

12. Granville State Forest Dam

Granville State Forest, Granville, Mass.

13. E. A. Jensen Dam

Mr. Edward A. Jensen, Jensen Orchards, Granville, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

HAMPDEN

1. Sazama Dam
Mr. Robert F. Sazama, North Road, Hampden, Mass.
2. Rockwell Dam
Mrs. G. W. Rockwell, Rockadundee Road, Hampden, Mass.
3. Peterson Dam (now Terry)
Mr. Stanley M. Terry, 94 Mountain Road, Hampden, Mass.
4. Stalker Dam
Present owner not on record; probably Town of Hampden.
5. LaBonte Dam
Ownership questionable; Town of Hampden.
6. Worthing Dam (now Gordon)
Attorney E. A. Gordon, 52 Main Street, Hampden, Mass.
7. Gleason Dam (formerly Koncitik)
Alton Gleason Company, 658 Berkshire Ave., Springfield, Mass.
8. Kibbee Dam
Mr. W. L. Kibbee, 311 Somers Road, Hampden, Mass.
9. Driscoll Dam
Mr. C. E. Driscoll, 280 Somers Road, Hampden, Mass.
10. Chaffin Dam
Mrs. Gertrude Chaffin, 150 Mill Road, Hampden, Mass.

11. Chaffin Dike

Mrs. Gertrude Chaffin, 150 Mill Road, Hampden, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

HOLLAND

1. Holland Rod & Gun Club - Upper Dam

Holland Rod & Gun Club, Holland, Mass.

2. Holland Rod & Gun Club - Lower Dam

Holland Rod & Gun Club, Holland, Mass.

3. Hamilton Reservoir Dam

Town of Holland, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS.

HOLYOKE

1. Holyoke Water Power Company Dam

Holyoke Water Power Company, 1 Canal Street, Holyoke, Mass.

2. Schaeffer Dam

Formerly Schaeffer, Smiths Ferry, Holyoke, Mass. Present owner not on record.

3. Lake Bray Dam

County Commissioners, Hampden-Hampshire Counties, Mass.

4. Whiting Street Reservoir Dam

Holyoke Water Works, Holyoke, Mass.

5. William Skinner Dam - Upper Dam

Mr. William Skinner II, 1155 Northampton Street, Holyoke, Mass.

6. William Skinner Dam - Lower Dam

Mr. William Skinner II, 1155 Northampton Street, Holyoke, Mass.

7. McLean Reservoir Dam

Holyoke Water Works, Holyoke, Mass.

8. Bray Reservoir Dam

Holyoke Water Works, Holyoke, Mass.

9. Ashley Pond Dam

Holyoke Water Works, Holyoke, Mass.

10. Zenner Dam

Holyoke Y. M. C. A., Holyoke, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

LONGMEADOW

1. Turner Park Dam

Town of Longmeadow, Mass.

2. Longmeadow Country Club Dam

Longmeadow Country Club, Longmeadow, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

LUDLOW

1. Ludlow Manufacturing Associates Dam (Red Bridge-now Western Mass. Elec.)

Western Mass. Electric Company, West Springfield, Mass.

2. Collins Dam

Wilbraham Industrial Park, North Wilbraham, Mass.

3. Gauthier Dam

Mr. Leo Gauthier, 192 Chapin Street, Ludlow, Mass.

4. Alden Dam

Town of Ludlow, Mass.

5. Ackerman Dam

Owner of record: F. Ackerman, Belchertown Road, Ludlow, Mass.
Ownership may have changed. Should be checked.

6. Springfield Water Works Dam

Springfield Water Works, City Hall, Springfield, Mass.

7. Ludlow Manufacturing Associates Dam (now Western Mass. Elec.)

Western Mass. Electric Company, West Springfield, Mass.

8. Western Mass. Electric Company Dam

Western Mass. Electric Company, West Springfield, Mass.

9. Block Dam (now Rozkuszka)

Mr. Walter A. Rozkuszka, 278 Winsor St., Ludlow, Mass.
This is an address of record of the mid-1950's. Ownership may have changed.

10. Carver Dam

Mr. Thomas J. Forgie, Ludlow, Mass.

**TIGHE
& BOND** CONSULTING ENGINEERS

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

MONSON

1. Church Manufacturing Company Dam
American-Standard Church Products, Palmer Road, Monson, Mass.
2. Moulton Dam - Chicopee Brook
Mr. George Caulkins, Palmer Road, Monson, Mass.
3. Anderson Dam
Mrs. William Anderson, Brimfield Road, Monson, Mass.
4. Zero Manufacturing Company Dam
Zero Manufacturing Company, 288 Main Street, Monson, Mass.
5. Monson Associates Dam
Owner unknown.
6. Monson Water Works Dam
Monson Water Department, Town Office Annex, Monson, Mass.
7. R. S. Sutcliffe Dam and Dike
Corps of Engineers, U. S. Government.
8. Smith Pond Dam
Mr. Leonard M. Meurisse, Stafford Road, Monson, Mass.
9. Aldrich Dam
Town of Monson or Mass. Dept. of Public Works.
10. C. P. Bradway Dam
Mr. Samuel McGill, 901-69th Ave., N., Philadelphia, Pa. 19126

**TIGHE
& BOND** CONSULTING ENGINEERS

11. Springfield Sportsmen's Club Dam

Springfield Sportsmen's Club, Inc., Woodhill Road, So. Monson, Mass.

12. Jurczyk Lower Dam

William W. Jurczyk, Inc., 16 Oak Street, Monson, Mass.

13. Jurczyk Upper Dam

William W. Jurczyk, Inc., 16 Oak Street, Monson, Mass.

14. Paradise Lake Dam

Estate of Grover C. Eaton, 61 Washington Road, Springfield, Mass.
and Paradise Lake, Monson, Mass.

15. Dr. M. Schimmel Dam (formerly Brown Dam)

Dr. Milton Schimmel, 130 Maple Street, Springfield, Mass.

16. Pulpit Rock Pond Dam - New Concrete Dam

Pulpit Rock Pond Dam - West Dam

Pulpit Rock Pond Dam - Small Dam

R. C. A. Realty, Inc., c/o Edward Christianson, East Longmeadow Rd.,
Hampden, Mass.

17. Shepard Upper Dam

J. E. Shepard Company, 37 Main Street, So. Windsor, Connecticut

18. Shepard Lower Dam

J. E. Shepard Company, 37 Main Street, So. Windsor, Connecticut

19. Lunden Dam

Mr. Walter Lunden, Butler Road, Monson, Mass.

20. O. E. Bradway Dam

Mr. O. E. Bradway, East Hill Road, Monson, Mass.

TIGHE
& BOND CONSULTING ENGINEERS

21. Conant Brook Flood Dam

New England Division, Corps of Engineers.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

MONTGOMERY

1. Westfield Reservoir Dam

Westfield Water Dept., Municipal Building, Westfield, Mass.

2. E. Timball Dam

Present owner unknown.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

PALMER

1. V. V. McNitt Dam

Breton Estates, Blanchardville Road, Palmer, Mass.

2. Palmer Fire District No. 1 - Upper Dam

Board of Water Commissioners, Palmer Fire District No. 1,
Palmer, Mass.

3. Palmer Fire District No. 1 - Lower Dam

Board of Water Commissioners, Palmer Fire District No. 1,
Palmer, Mass.

4. Mongo Dam

Mass. Turnpike.

5. Thorndike Fire and Water District Dam - Upper Dam

Board of Water Commissioners, Thorndike Fire and Water District,
Thorndike, Mass.

6. Thorndike Fire and Water District Dam - Lower Dam

Board of Water Commissioners, Thorndike Fire and Water District,
Thorndike, Mass.

7. Lake Thompson Dam

Lake Thompson Civic Association, Palmer, Mass.

8. State Fish Hatchery Dams - Upper Dam

Mass. Fish Hatchery, Ware Road, Palmer, Mass.

9. State Fish Hatchery Dams - Lower Dam

Mass. Fish Hatchery, Ware Road, Palmer, Mass.

10. Forest Lake Dam

Mr. Dwight Holbrook, 424 Main Street, Palmer, Mass.

11. Textile Printing Company - Upper Dam

Mr. Jack Endelson, Bondsville Realty, Inc., Bondsville, Mass.

12. Textile Printing Company - Lower Dam

Mr. Jack Endelson, Bondsville Realty, Inc., Bondsville, Mass.

13. Diamond National Corp. - Upper Dam

Diamond National Corp., Thorndike, Mass.

14. Diamond National Corp. - Lower Dam

Diamond National Corp., Thorndike, Mass.

15. Sasur Dam

Palmer Highway Department, Palmer, Mass.

16. Lizak Dam (Campers Country Club)

Campers Country Club, Division of Heritage Hills Farm, 190B
Thorndike St., Palmer, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

RUSSELL

1. Russell Water Works Dam

Russell Water Dept., Town Office, Russell, Mass.

2. Russell Pond Dam

Strathmore Paper Co., West Springfield, Mass.

3. Strathmore Paper Co. - Potash Brook Dam

Strathmore Paper Co., West Springfield, Mass.

4. Strathmore Paper Co. - 1938 Structure

Strathmore Paper Co., West Springfield, Mass.

5. Strathmore Paper Co. - 1950 Structure

Strathmore Paper Co., West Springfield, Mass.

6. Strathmore Paper Co. Dike

Strathmore Paper Co., West Springfield, Mass.

7. Texon, Inc. Dam

Texon, Inc., Russell, Mass.

8. Westfield River Paper Company Dam

Westfield River Paper Co., Russell, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

SOUTHWICK

1. Irving Kimball Dam

Mr. Irving Kimball, Kimball Container Co., Can-Pak Service, Inc.
Feeding Hills, Mass.

2. Dr. Logie Dam

Dr. Arthur J. Logie, Medical Arts Building, 30 Court St., Westfield, Mass.

3. Ahrens Dam

Mr. D. N. Spencer, Vining Hill Road, Southwick, Mass.

4. Congamond Lakes South Dike

Town of Southwick, Mass.

5. Congamond Lakes Outlet

Town of Southwick, Mass.

6. Congamond Lakes North Dike

Town of Southwick, Mass.

7. Hathaway & Steane Co. Dam #1 (on Slab Brook)

Hathaway & Steane Corp., College Highway, Southwick, Mass.

8. Hathaway & Steane Co. Dam #2 (on Slab Brook)

Hathaway & Steane Corp., College Highway, Southwick, Mass.

9. Hathaway & Steane Co. Farm Pond Dam (behind barn and farmhouse)

Hathaway & Steane Co., College Highway, Southwick, Mass.

10. Basil Tysz Dam

Mr. Basil Tysz, c/o Hathaway & Steane Corp., College Highway,
Southwick, Mass.

11. General Cigar Corp. - Lower Dam

General Cigar Corp., 630 Oakwood Ave., West Hartford, Connecticut

12. General Cigar Corp. - Upper Dam

General Cigar Corp., 630 Oakwood Ave., West Hartford, Connecticut

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

SPRINGFIELD

1. Forest Park Lower Dam

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

2. Forest Park Middle Dam

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

3. Forest Park Upper Dam

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

4. U. S. Government Dam at Watershops Pond

City of Springfield, Mass.

5. Springfield Park Dept. Dam - Sixteen Acres Pond

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

6. Springfield Park Dept. Dam - Breckwood Park

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

7. Monsanto Chemical Company - Upper Dam

Monsanto Chemical Co., 2812 Monsanto Ave., Indian Orchard, Mass.

8. Monsanto Chemical Company - Lower Dam

Monsanto Chemical Co., 2812 Monsanto Ave., Indian Orchard, Mass.

9. Van Horn Park - Upper Dam

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

10. Van Horn Park - Lower Dam

Springfield Parks Commission, Public Parks Dept., Forest Park Office,
Springfield, Mass.

11. Bay State Plumbing & Heating Supply Co. Dam

Bay State Plumbing & Heating Supply Co., 15 Mill St., Springfield, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS.

TOLLAND

1. Richmond Dam

Connecticut Valley Girl Scouts, Tolland, Mass.

2. H. E. Newell Dam

Present owner unknown. Dam is part of State Highway culvert inlet.

3. Lost Wilderness Dam

Lost Wilderness Ranch, Tolland, Mass.

4. Camp Spruce Hill Dam (Victory Lake)

Camp Spruce Hill, Tolland, Mass.

5. Noyes Pond Dam

Tunxis Club, Tolland, Mass.

6. Tunxis Club New Dam at Penstock Site

Tunxis Club, Tolland, Mass.

7. Tunxis Club New Trout Pond Dam

Tunxis Club, Tolland, Mass.

8. Tunxis Trout Pond Dam

Tunxis Club, Tolland, Mass.

9. Chamonix Chalet Properties, Inc. Dam

Wildwood Properties, Tolland, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS.

WALES

1. Lake George Dam
Town of Wales, Mass.
2. Squires Dam (now Morgan)
Town of Wales, Mass.
3. Shaw Dam
Town of Wales, Mass.
4. Norcross Dam #1
Tupper Hill Wildlife Sanctuary, Wales, Mass.
5. Norcross Dam #2
Tupper Hill Wildlife Sanctuary, Wales, Mass.
6. Norcross Dam #3
Tupper Hill Wildlife Sanctuary, Wales, Mass.
7. Norcross Dam #4
Tupper Hill Wildlife Sanctuary, Wales, Mass.
8. Vinica Pond Dam
Tupper Hill Wildlife Sanctuary, Wales, Mass.
9. Trout Pond Dam
Tupper Hill Wildlife Sanctuary, Wales, Mass.
10. Wales Fish & Gun Club Dam
Wales Fish & Gun Club, Wales, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

WEST SPRINGFIELD

1. Strathmore Paper Company Dam

Strathmore Paper Company, West Springfield, Mass.

2. Country Club Dam

Springfield Country Club, 1375 Elm Street, West Springfield, Mass.

3. Lyncosky Dam - Upper Dam

Mr. Fred Lyncosky, 573 Piper Road, West Springfield, Mass.

4. Lyncosky Dam - Lower Dam

Mr. Fred Lyncosky, 573 Piper Road, West Springfield, Mass.

5. Piper Reservoir Dam

Town of West Springfield, Town Office, West Springfield, Mass.

6. Bear Hole Dam

Office of the Superintendent, West Springfield Water Department,
Piper Road, West Springfield, Mass.

**TIGHE
& BOND CONSULTING ENGINEERS**

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

WESTFIELD

1. Horse Pond Dam
Board of Water Commissioners, Municipal Building, Westfield, Mass.
2. Chapin Pond Dam
Board of Water Commissioners, Municipal Building, Westfield, Mass.
3. Westfield Sportsmen's Club Dam
Westfield Sportsmen's Club, Montgomery Road, Westfield, Mass.
4. Tekoa Dam
Board of Water Commissioners, Municipal Building, Westfield, Mass.
5. Stevens Paper Company - Lower Dam
Stevens Paper Company, 77 Mill Street, Westfield, Mass.
6. Stevens Paper Company - Upper Dam
Stevens Paper Company, 77 Mill Street, Westfield, Mass.
7. Springfield Water Works Intake Dam
Springfield Water Works, City Hall, Springfield, Mass.
8. West Parish Filter Dam #1 (Lower)
Springfield Water Works, City Hall, Springfield, Mass.
9. West Parish Filter Dam #2 (Middle)
Springfield Water Works, City Hall, Springfield, Mass.
10. West Parish Filter Dam #3 (Upper)
Springfield Water Works, City Hall, Springfield, Mass.

11. Howard Smith Dam

Westfield Y. M. C. A. , Westfield, Mass.

12. Stanley Park Dam

Stanley Park, Westfield, Mass.

13. Florek Dam

Florek Dairy, Granville Road, Westfield, Mass.

14. Arm Brook Dam

City of Westfield, Municipal Building, Westfield, Mass.

15. Powder Mill Brook Dam

City of Westfield, Municipal Building, Westfield, Mass.

DAMS IN HAMPDEN COUNTY, MASSACHUSETTS

WILBRAHAM

1. Guidette Dam

Mr. Donald V. Guidette, 180 Crane Hill Road, No. Wilbraham, Mass.

2. Rice Dam

Rice Fruit Farm, 757 Main St., Wilbraham, Mass.

3. Y.M.H.A. Dam

Y.M.H.A. Day Camp, Soule Road, Wilbraham, Mass.

Winter address: Jewish Community Center, 1160 Dickinson St.,
Springfield, Mass. 01108

4. Green Acres Fruit Farm Dam

Green Acres Fruit Farm, 868 Main St., Wilbraham, Mass.

Hampden County Sportsmen's Clubs - Access to Ponds



1956 Reports

Hampden County Sportsmen's Clubs - Public Access to Ponds - 1956-1959.

City/Town	Wilbraham
City/Town	Brimfield
City/Town	Springfield
City/Town	Palmer
City/Town	Westfield
City/Town	Ludlow
City/Town	Russell
Water	Buck Pond
Water	Hampton Ponds
Water	Horse Pond
Water	Pequot Lake
Water	Forest Lake
Water	Sherman Pond
Water	Loon Pond
Water	Nine Mile Pond
Water	Lorraine Lake
Water	Chapin Pond
Water	Five Mile Pond

Water

Hazzard Pond

Water

Woronoake Lake

copy

145 Manchester Terr.
Springfield, Mass.
Sept. 25, 1956

Department of Public Works
100 Nashua St.
Boston, Mass.

To whom it may concern:

The undersigned ten (10) citizens of Massachusetts respectfully represent that in their opinion public necessity requires a right of way for public access to the shores of HAZZARD POND, a great pond in the town of Russell, and to the shores of HAMPTON PONDS, (Pequot Lake), a great pond in the towns of Westfield and South Hampton ; and request that a public hearing be held by the joint board under the provisions of Section 18 A of Chapter 91 of the General Laws and such further action taken by said board as may be necessary under the provisions of said statute.

<u>Name</u>	<u>Street Address</u>	<u>City or Town</u>
Roland Reed	10 Leland Ave	Agawam, Mass.
Leon A. Glidden	61 Center St	Agawam, Mass.
George E. Urban	145 Manchester Terr	Springfield, Mass.
Kenneth Steup	163 East Longmeadow Rd.	Wilbraham, Mass.
Hiraham Fox	136 Nelson St.	West Springfield, Mass.
W. Krenziel	33 Miller St.	Westfield, Mass.
Albert Leimieux	65 West St.	Chicopee, Mass.
John Lukasik	22 Burton St.	Chicopee, Mass.
Max Zielenski	Lombard Rd.	Ludlow, Mass.
Emile C. Dauphinais	126 Winsor St.	Ludlow, Mass.

Copy mailed to Attorney Generals Office & Hampden County Comm. Office

THE COUNCIL of SPORTSMEN'S CLUBS
of
HAMPDEN COUNTY
G. E. Urban
145 Manchester Terr.
Springfield, Mass.

very truly yours,

George E. Urban
George E. Urban

The Council of Sportsmen's Clubs of Hampden
County

December 5, 1956

Attorney Generals Office
State House
Boston, Mass.

Gentlemen:

Since our recent correspondence regarding petitions for public access to Hazzard and Hamptons Ponds, we have been informed by the Division of Water Ways that these petitions were improperly filed. These errors have been corrected and new petitions filed for Hazzard, Hampton or Pequoit, Herse and Buck (the last three all in the Hampton Group) as well as Forest Lake in the town of Palmer. The enclosed sheet lists the new names appearing on the corrected forms and for your convenience are listed under the proper ponds.

We have learned the proper procedure the hard way and wish to ask your pardon for the added work and inconvenience.

We trust that you will make the proper corrections and additions.

very truly yours,

George E. Urban, Chair. Legislative Comm.

Please address reply to:

george e. urban
145 Manchester Terrace
Springfield, Mass.

Copy to Hampden County Commissioners Office

Treasurer
Elizabeth Anderson
26 Wigwam Place
Springfield, Mass.
Tel. RE 9-1573

President
D. Bodurtha
27 Leonard Street
Agawam, Mass.

Secretary
E. C. Vasa
164 Denver Street
Springfield, Mass.
Tel. Spfld. RE 6-6149

Ludlow Fish and Game
Association, Inc.
West Springfield Fish and
Game Club
Wilbraham Fish and Game
Club, Inc.
Springfield Sportsman's
Club, Inc.
Springfield Revolver Club
Pioneer Valley Sportsmans Club
Saltwater Sportsmens Club
of Western Mass.
Holyoke Beagle Club
Spalding Fish and Game Club
Westfield Sportsmans Club



Agawam Sportsmans Club, Inc.
Chicopee Rod and Gun Club
Fairview Fish and Game
Association, Inc.
Holyoke Fish and Game
Assn. Inc.
Western Massachusetts
Beagle Club
Westfield Beagle Club, Inc.
Hampden County Women's
Rod and Gun Club, Inc.
Chester Rod and Gun Club
Mawaga Sporting Club
Chicopee Sportsman's Club
Chicopee Archers

The Council of Sportsmen's Clubs of Hampden County

Names appearing on five petitions for public access to great ponds as filed by the above group with the Attorney Generals Office and Divl. of Water Ways, Dec. 6, 1956

Public Access Hazzard Pond Russel.

Albert Burroughs
59 West St, Ludlow
Peter Yeskenas
2050 Wilbraham Rd. Spfld.
Adrain Blais
Arcadia St Chicopee
Hector Peliter
818 Gratten St Aldenville
Hiram Fox
Nelson Ave, W. Spfld
A. Whitek
6 Exchange St. Westfield
L. Lajeimesse
105 Ward St Chicopee Falls
John Lukasik
42 Lukasik Ave., Fairview
Frank Zemanek
51 Milton St, Indian Orchard
Walter Pery
85 Highland View, Westfield

Public access to Buck, Horse,
Hampton or Pequeit and Forest
Lake-same names on each

Frank Zemanek Milton St Indian
Orchard

E. C. Dauphinais Windsor St. Ludlow
D. BODURTHA Leonard St, Agawam
Adrain Blais Arcadia St Chicopee
Eliz. Vassa Denver St Spfld.
H. Fox, Nelson Ave. W. Spfld.
Max Zelinski 92 Yale St Ludlow
Fred Lencjak Riverview Ter Chicopee
Alex Witek Exchange St Westfield
G. E. Urban Manchester Ter. Spfld

Treasurer
D. Bodurtha
27 Leonard Street
Agawam, Mass.

President
F. A. Lonczak
26 Riverview Terrace
Chicopee, Mass.
Tel. LY 4-6769

Secretary
E. C. Vasa
164 Denver Street
Springfield, Mass.
Tel. Spfld. RE 6-6149

Ludlow Fish and Game
Association, Inc.
West Springfield Fish and
Game Club
Wilbraham Fish and Game
Club, Inc.
Springfield Sportsman's
Club, Inc.
Springfield Revolver Club
Pioneer Valley Sportsmans Club
Saltwater Sportsmens Club
of Western Mass.
Holyoke Beagle Club
Spalding Fish and Game Club
Westfield Sportsmans Club



Agawam Sportsmans Club, Inc.
Chicopee Rod and Gun Club
Fairview Fish and Game
Association, Inc.
Holyoke Fish and Game Assn., Inc.
Western Massachusetts Beagle Club
Westfield Beagle Club, Inc.
Hampden County Women's
Rod and Gun Club, Inc.
Chester Rod and Gun Club
Mawaga Sporting Club
Chicopee Sportsman's Club
Chicopee Archers
Southwick Saddle and Stream Club
Agawam Bowmen

The Council of Sportsmen's Clubs of Hampden County

Representative George Porter
Chairman of Rights of Ways Committee
State House
Beacon Hill Mass

164 Denver Street
Springfield Mass

Boston Mass.

The Above Council of Sportsmens Clubs of Hampden County have instructed me to seek your assistance in in obtaining the Rights of Ways to the following :

The new Rts.of Ways that the Council have applied for are encompassed in the following Bills--

H-2480-2481
H-2482
H-2483-2484.

The Rts of Ways to great ponds that the Council have been instrumental in getting put through,so far,have cost the County little or nothing in some cases.

These Bills can be put through by the County Commissioners the same way the previous Bills have been ,Please give this your considered attention,as soon as possible.We thank you for the time and efforts on our behalf in the past and hope that you will continue to assist us in the future with the same fine effort.

Sincerely

Elizabeth C.Vasa

Secretary

Treasurer
D. Bodurtha
27 Leonard Street
Agawam, Mass.

President
F. A. Lonczak
26 Riverview Terrace
Chicopee, Mass.
Tel. LY 4-6769

Secretary
E. C. Vasa
164 Denver Street
Springfield, Mass.
Tel. Spfld. RE 6-6149

Ludlow Fish and Game
Association, Inc.
West Springfield Fish and
Game Club
Wilbraham Fish and Game
Club, Inc.
Springfield Sportsman's
Club, Inc.
Springfield Revolver Club
Pioneer Valley Sportsmans Club
Saltwater Sportsmens Club
of Western Mass.
Holyoke Beagle Club
Spalding Fish and Game Club
Westfield Sportsmans Club



Agawam Sportsmans Club, Inc.
Chicopee Rod and Gun Club
Fairview Fish and Game
Association, Inc.
Holyoke Fish and Game Assn., Inc.
Western Massachusetts Beagle Club
Westfield Beagle Club, Inc.
Hampden County Women's
Rod and Gun Club, Inc.
Chester Rod and Gun Club
Mawaga Sporting Club
Chicopee Sportsman's Club
Chicopee Archers
Southwick Saddle and Stream Club
Agawam Bowmen

The Council of Sportsmen's Clubs of Hampden County

County Commissioners—

164 Denver St
Springfield Mass.

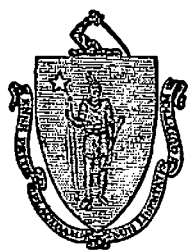
Gentlemen:

This is a copy of the letter sent to Mr. Porter—Chairman of the
Rights of Ways Committee .

Sincerely.

Elizabeth C. Vasa Secretary

1958



The Commonwealth of Massachusetts
House of Representatives

State House, Boston

March 13 58

Gentlemen:-

The Committee on
Counties heard these
bills today and is holding
up action pending further
information regarding
costs -

Sincerely

Geo W Porter

The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC WORKS,
100 NASHUA STREET, BOSTON 14, December 31, 1957.

**SPECIAL REPORT OF THE DEPARTMENT OF PUBLIC
WORKS RELATIVE TO A RIGHT OF WAY FOR PUBLIC
ACCESS TO FOREST LAKE IN THE TOWN OF PALMER.**

*To the Honorable Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The Joint Board, constituted under the provisions of section 18A of chapter 91 of the General Laws, submits the following report relative to a right of way for public access to Forest Lake situated in the town of Palmer.

Section 18A of chapter 91 of the General Laws provides:

Upon petition of ten citizens of the commonwealth that in their opinion public necessity requires a right of way for public access to any great pond within the commonwealth, the department and the attorney general or a representative designated by him sitting jointly shall hold a public hearing and receive such evidence thereon as may be presented to them. The joint board may make such additional investigation as it deems desirable and if it appears to said board that such a right of way exists it shall present a petition to the land court for registration of the easement. If it appears that no right of way exists it shall submit a report, together with recommendations thereon, to the general court on or before January first of the following year. This section shall not apply to any body of water used as a source of water supply by the commonwealth or by any town or district, or water company, nor shall it affect the right of the commonwealth or any town or district or water company to the use and control of the waters of any such pond for the purpose of a water supply, nor shall it affect or diminish any existing right to the use of the water of any such pond for mercantile or manufacturing purposes.

Pursuant to this statute a petition, suitably signed, was filed with the Department of Public Works representing that public necessity requires establishment of a public right of way for access to Forest Lake in the town of Palmer.

Forest Lake is a great pond of the Commonwealth, this having been confirmed by a survey made by the Department of Public

Works in 1932, which showed a dam at the outlet, believed to raise the pond approximately 4 feet above its natural level. Natural area of the pond was computed as 41.3 acres.

Bennett Street, a public way, runs along the northerly shore of the pond, but involves a beach area where restrictions are imposed. Central Street which follows around the northwesterly shore is a public way abutting the pond but affords only limited access due to a cable guard rail and dangerous traffic conditions.

Other than this there is no land on the shore in public ownership and no public roads reach the pond.

It seemed that the problem at this pond was one of suitable access and that the comments made at all hearings on petitions of rights of way this year, regarding need for provision for parking, were particularly applicable in this case.

Upon consideration of the information and evidence presented at the public hearing, and that obtained from further investigation, the Board finds that no public right of way suitable for public access to Forest Lake exists at present and that establishment of such a right of way is necessary and desirable.

The Board recommends that the County Commissioners of Hampden County be directed to lay out a right of way for public access to the edge of Forest Lake, as existing in its natural state, and an area for parking contiguous thereto, in such location as may be determined suitable, and submits the attached bill for carrying out this recommendation.

Respectfully submitted,

DEPARTMENT OF PUBLIC WORKS.

A. N. DiNATALE,
Commissioner.

FRED B. DOLE,
LEWIS J. FRITZ,
Associate Commissioners.

RODOLPHE G. BESSETTE,
Director, Division of Waterways.

DEPARTMENT OF THE ATTORNEY GENERAL.

WILLIAM J. ROBINSON,
Assistant Attorney General.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Fifty-Eight.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A RIGHT OF WAY
FOR PUBLIC ACCESS TO FOREST LAKE IN THE TOWN OF PALMER
AND OF AN AREA FOR THE PARKING OF VEHICLES CONTIGUOUS
TO SAID RIGHT OF WAY.

*Be it enacted by the Senate and House of Representatives in General
Court assembled, and by the authority of the same, as follows:*

1 SECTION 1. The county commissioners of Hampden county
2 are hereby authorized and directed to lay out a right of way for
3 public access to Forest lake in the town of Palmer, and an area
4 for parking contiguous thereto, in accordance with plans to be
5 approved by the department of public works and showing the
6 location and dimensions of such right of way and parking area.
7 If it is necessary to acquire land for the purpose of laying out
8 such right of way or parking area, said county commissioners
9 shall at the time such right of way or parking area is laid out
10 take such land by eminent domain under chapter seventy-nine
11 of the General Laws. Any person sustaining damages in his
12 property by the laying out of such right of way or parking area,
13 or by specific repairs or improvements thereon, shall be en-
14 titled to recover the same under said chapter seventy-nine;
15 provided, that the right to recover damages, if any, by reason of
16 the laying out of such right of way or parking area shall vest upon
17 the recording of the order of taking by said county commissioners
18 and that no entry or possession for the purpose of constructing
19 a public way on land so taken shall be required for the purpose
20 of validating such taking or for the payment of damages by
21 reason thereof.

1 SECTION 2. The town of Palmer from time to time may make
2 specific repairs on or improve such right of way or parking
3 area to such extent as it may deem necessary, but neither the
4 county of Hampden nor any city or town therein shall be re-

5 quired to keep such right of way or parking area in repair, nor
6 shall it be liable for injury sustained by persons traveling
7 thereon; provided, that sufficient notice to warn the public is
8 posted where such way enters upon or unites with an existing
9 public way.

1 SECTION 3. All expenses incurred by said county commission-
2 ers in connection with such right of way or parking area shall be
3 borne by the county of Hampden, or by such cities or towns
4 therein, and in such proportions as said county commissioners
5 may determine.

1 SECTION 4. Said right of way or parking area shall not be
2 discontinued or abandoned without authority therefor from the
3 general court.

1 SECTION 5. Nothing in this act shall be construed to limit
2 the powers of the department of public health, or any local
3 board of health, under any general or special law.

The Commonwealth of Massachusetts

**SPECIAL REPORT OF THE DEPARTMENT OF PUBLIC
WORKS RELATIVE TO A RIGHT OF WAY FOR PUB-
LIC ACCESS TO PEQUOT POND IN THE TOWN OF
SOUTHAMPTON AND THE CITY OF WESTFIELD.**

DEPARTMENT OF PUBLIC WORKS,
100 NASHUA STREET, BOSTON 14, December 31, 1957.

*To the Honorable Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The Joint Board, constituted under the provisions of section 18A of chapter 91 of the General Laws, submits the following report relative to a right of way for public access to Pequot Pond, one of the Hampton Ponds, situated in the town of Southamptton and the city of Westfield.

Section 18A of chapter 91 of the General Laws provides:

Upon petition of ten citizens of the commonwealth that in their opinion public necessity requires a right of way for public access to any great pond within the commonwealth, the department and the attorney general or a representative designated by him sitting jointly shall hold a public hearing and receive such evidence thereon as may be presented to them. The joint board may make such additional investigation as it deems desirable and if it appears to said board that such a right of way exists it shall present a petition to the land court for registration of the easement. If it appears that no right of way exists it shall submit a report, together with recommendations thereon, to the general court on or before January first of the following year. This section shall not apply to any body of water used as a source of water supply by the commonwealth or by any town or district, or water company, nor shall it affect the right of the commonwealth or any town or district or water company to the use and control of the waters of any such pond for the purpose of a water supply, nor shall it affect or diminish any existing right to the use of the water of any such pond for mercantile or manufacturing purposes.

Pursuant to this statute a petition suitably signed was filed with the Department of Public Works representing that public necessity requires establishment of a public right of way for access to Pequot Pond, sometimes known as Hampton Pond, which is one of the Hampton Ponds and lies in the town of Southamptton and the city of Westfield.

The Hampton Ponds were surveyed by the Department of Public Works in 1923, and Pequot Pond was found to be increased

in size by virtue of a dam located at the outlet of Horse Pond with which Pequot Pond is directly connected. From the survey it was established that the natural area of Pequot Pond is 51.9 acres, confirming its status as a great pond of the Commonwealth.

Pequot Pond is skirted by numbered Route 202 which touches the pond at two locations, both of which involve a cable guard rail and dangerous traffic conditions. In addition, a town way touches the shore at the southwesterly end of the pond, providing a beach area which is not, however, a suitable access point for the general public.

Other than this there is no publicly owned land on the shore of the pond and the public road runs 500 feet to 1,200 feet distant.

As in the case of other hearings which have been held on such petitions this year, the need under present-day conditions to provide for parking in conjunction with access routes to the great ponds was stressed as of prime importance, and almost equal to the need for the rights of way themselves.

Upon consideration of the information and evidence presented at the public hearing and that obtained by further investigation, the Board finds that no public right of way suitable for access to Pequot Pond exists at present and that establishment of such a right of way is necessary and desirable.

The Board recommends that the County Commissioners of Hampden County and/or of Hampshire County be directed to lay out a public right of way to the edge of Pequot Pond as existing in its natural state, and an area for parking contiguous thereto, in such location as may be determined suitable, and submits the attached bill for carrying out this recommendation.

Respectfully submitted,

DEPARTMENT OF PUBLIC WORKS.

A. N. DiNATALE,

Commissioner.

FRED B. DOLE,

LEWIS J. FRITZ,

Associate Commissioners.

RODOLPHE G. BESSETTE,

Director, Division of Waterways.

DEPARTMENT OF THE ATTORNEY GENERAL.

WILLIAM J. ROBINSON,

Assistant Attorney General.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Fifty-Eight.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A RIGHT OF WAY FOR PUBLIC ACCESS TO PEQUOT POND IN THE CITY OF WESTFIELD AND THE TOWN OF SOUTHAMPTON AND OF AN AREA FOR THE PARKING OF VEHICLES CONTIGUOUS TO SAID RIGHT OF WAY.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. The county commissioners of Hampden county
2 and/or Hampshire county are hereby authorized and directed
3 to lay out a right of way for public access to Pequot pond, a
4 pond lying in the city of Westfield and the town of South-
5 hampton, and an area for parking contiguous thereto, in ac-
6 cordance with plans to be approved by the department of public
7 works and showing the location and dimensions of such right
8 of way and parking area. If it is necessary to acquire land for
9 the purpose of laying out such right of way or parking area,
10 said county commissioners in their respective counties shall at
11 the time such right of way or parking area is laid out take such
12 land by eminent domain under chapter seventy-nine of the
13 General Laws. Any person sustaining damages in his property
14 by the laying out of such right of way or parking area, or by
15 specific repairs or improvements thereon, shall be entitled to
16 recover the same under said chapter seventy-nine; provided,
17 that the right to recover damages, if any, by reason of the laying
18 out of such right of way or parking area shall vest upon the
19 recording of the order of taking by said county commissioners
20 and that no entry or possession for the purpose of constructing
21 a public way on land so taken shall be required for the purpose
22 of validating such taking or for the payment of damages by
23 reason thereof.

1 SECTION 2. The city of Westfield and/or the town of South-
2 ampton from time to time may make specific repairs on or

3 improve such portions of said right of way and parking area as
4 may be located in their respective limits to such extent as it
5 may deem necessary, but neither the county of Hampden or
6 Hampshire nor any city or town therein shall be required to
7 keep such right of way or parking area in repair, nor shall it be
8 liable for injury sustained by persons traveling thereon; pro-
9 vided, that sufficient notice to warn the public is posted where
10 such way enters upon or unites with an existing public way.

1 SECTION 3. Said county commissioners of Hampden and
2 Hampshire counties shall work jointly in determining a suitable
3 location for said right of way and parking area, which may be
4 entirely in either county or partly in each.

1 SECTION 4. All expenses incurred by said county commis-
2 sioners in connection with such right of way or parking area
3 shall be borne by the county of Hampden or Hampshire; each
4 for any portion in their respective county, or by such cities or
5 towns therein, and in such proportions as said county com-
6 missioners may determine.

1 SECTION 5. Said right of way or parking area shall not be
2 discontinued or abandoned without authority therefor from the
3 general court.

1 SECTION 6. Nothing in this act shall be construed to limit
2 the powers of the department of public health, or any local
3 board of health, under any general or special law.

HOUSE No. 2482

The Commonwealth of Massachusetts

SPECIAL REPORT OF THE DEPARTMENT OF PUBLIC WORKS RELATIVE TO A RIGHT OF WAY FOR PUBLIC ACCESS TO WORONOAKE LAKE IN THE TOWN OF RUSSELL.

DEPARTMENT OF PUBLIC WORKS,
100 NASHUA STREET, BOSTON 14, December 31, 1957.

*To the Honorable Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The Joint Board, constituted under the provisions of section 18A of chapter 91 of the General Laws, submits the following report relative to a right of way for public access to Woronoake Lake, also known as Russell Pond and Hazard Pond, situated in the town of Russell.

Section 18A of chapter 91 of the General Laws provides:

Upon petition of ten citizens of the commonwealth that in their opinion public necessity requires a right of way for public access to any great pond within the commonwealth, the department and the attorney general or a representative designated by him sitting jointly shall hold a public hearing and receive such evidence thereon as may be presented to them. The joint board may make such additional investigation as it deems desirable and if it appears to said board that such a right of way exists it shall present a petition to the land court for registration of the easement. If it appears that no right of way exists it shall submit a report, together with recommendations thereon, to the general court on or before January first of the following year. This section shall not apply to any body of water used as a source of water supply by the commonwealth or by any town or district, or water company, nor shall it affect the right of the commonwealth or any town or district or water company to the use and control of the waters of any such pond for the purpose of a water supply, nor shall it affect or diminish any existing right to the use of the water of any such pond for mercantile or manufacturing purposes.

Pursuant to this statute a petition suitably signed was filed with the Department of Public Works representing that public necessity requires establishment of a public right of way for access to Hazard Pond, known more correctly as Woronoake Lake, in the town of Russell.

Woronoake Lake is a great pond of the Commonwealth which has been increased in size by a dam at the outlet, raising the pond approximately 7 feet above its natural level. The area of the flowed pond is approximately 71 acres.

There is no publicly owned land on the shore of this pond with the exception of an old town cemetery which, of course, cannot be construed as providing a means of access to the pond by the general public. General Knox Road, a public way, passes easterly of the pond just downstream from the dam, while Birch Hill Road runs along and some 100 feet to 300 feet off the northerly shore. However, the status of this road is in dispute between the town which claims it to be a public way and the Hampden County Council of the Boy Scouts of America which owns much of the land at the pond and maintains a Boy Scout camp here.

Objections to public rights of way frequently raised by such organizations as this, having sizeable installations and interests in the various great ponds, are seemingly valid from the point of view of the organization, but nevertheless take no cognizance of the guaranteed right of the public to reach and use the great ponds, as asserted by the Colonial Ordinance of 1641-1647, and confirmed by numerous judicial interpretations since that time.

Recommendations were repeatedly made at the hearings held this year on petitions for establishment of rights of way to great ponds, that provision for parking be made in every instance where a right of way is laid out, with the assertion that this is almost equal in importance to establishment of the right of way.

Upon consideration of the information and evidence presented at the public hearing, and that obtained by further investigation, the Board finds that no public right of way suitable for access to Woronoake Lake exists at present and that establishment of such a right of way is necessary and desirable.

The Board recommends that the County Commissioners of Hampden County be directed to lay out a public right of way to the edge of Woronoake Lake, as existing in its natural state, and an area

for parking, contiguous thereto, in such location as may be determined suitable, and submits the attached bill for carrying out this recommendation.

Respectfully submitted,

DEPARTMENT OF PUBLIC WORKS.

A. N. DiNATALE,
Commissioner.

FRED B. DOLE,

LEWIS J. FRITZ,

Associate Commissioners.

RODOLPHE G. BESSETTE,

Director, Division of Waterways.

DEPARTMENT OF THE ATTORNEY GENERAL.

WILLIAM J. ROBINSON,

Assistant Attorney General.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Fifty-Eight.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A RIGHT OF WAY FOR PUBLIC ACCESS TO WORONOAKE LAKE, OTHERWISE KNOWN AS HAZARD POND AND RUSSELL POND IN THE TOWN OF RUSSELL AND OF AN AREA FOR THE PARKING OF VEHICLES CONTIGUOUS TO SAID RIGHT OF WAY.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. The county commissioners of Hampden county
2 are hereby authorized and directed to lay out a right of way for
3 public access to Woronoake lake, otherwise known as Hazard
4 pond and Russell pond, in the town of Russell and an area for
5 parking contiguous thereto in accordance with plans to be ap-
6 proved by the department of public works, and showing the
7 location and dimensions of such right of way and parking area.
8 If it is necessary to acquire land for the purpose of laying out such
9 right of way or parking area said county commissioners shall at
10 the time such right of way or parking area is laid out take such
11 land by eminent domain under chapter seventy-nine of the
12 General Laws. Any person sustaining damages in his property
13 by the laying out of such right of way or parking area, or by
14 specific repairs or improvements thereon, shall be entitled to
15 recover the same under said chapter seventy-nine; provided,
16 that the right to recover damages, if any, by reason of the laying
17 out of such right of way or parking area shall vest upon the
18 recording of the order of taking by said county commissioners
19 and that no entry or possession for the purpose of constructing
20 a public way on land so taken shall be required for the purpose
21 of validating such taking or for the payment of damages by
22 reason thereof.

1 SECTION 2. The town of Russell from time to time may make
2 specific repairs on or improve such right of way or parking area

3 to such extent as it may deem necessary, but neither the county
4 of Hampden nor any city or town therein shall be required to
5 keep such right of way or parking area in repair, nor shall it be
6 liable for injury sustained by persons traveling thereon; pro-
7 vided, that sufficient notice to warn the public is posted where
8 such way enters upon or unites with an existing public way.

1 SECTION 3. All expenses incurred by said county commission-
2 ers in connection with such right of way or parking area shall be
3 borne by the county of Hampden, or by such cities and towns
4 therein, and in such proportions as said county commissioners
5 may determine.

1 SECTION 4. Said right of way or parking area shall not be
2 discontinued or abandoned without authority therefor from the
3 general court.

1 SECTION 5. Nothing in this act shall be construed to limit
2 the powers of the department of public health, or any local
3 board of health, under any general or special law.

The Commonwealth of Massachusetts

**SPECIAL REPORT OF THE DEPARTMENT OF PUBLIC
WORKS RELATIVE TO A RIGHT OF WAY FOR PUBLIC
ACCESS TO BUCK POND, IN THE CITY OF WEST-
FIELD.**

DEPARTMENT OF PUBLIC WORKS,
100 NASHUA STREET, BOSTON 14, December 31, 1957.

*To the Honorable Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The Joint Board, constituted under the provisions of section 18A of chapter 91 of the General Laws, submits the following report relative to a right of way for public access to Buck Pond, one of the Hampton Ponds, situated in the city of Westfield.

Section 18A of chapter 91 of the General Laws provides:

Upon petition of ten citizens of the commonwealth that in their opinion public necessity requires a right of way for public access to any great pond within the commonwealth, the department and the attorney general or a representative designated by him sitting jointly shall hold a public hearing and receive such evidence thereon as may be presented to them. The joint board may make such additional investigation as it deems desirable and if it appears to said board that such a right of way exists it shall present a petition to the land court for registration of the easement. If it appears that no right of way exists it shall submit a report, together with recommendations thereon, to the general court on or before January first of the following year. This section shall not apply to any body of water used as a source of water supply by the commonwealth or by any town or district, or water company, nor shall it affect the right of the commonwealth or any town or district or water company to the use and control of the waters of any such pond for the purpose of a water supply, nor shall it affect or diminish any existing right to the use of the water of any such pond for mercantile or manufacturing purposes.

Pursuant to this statute a petition suitably signed was filed with the Department of Public Works representing that public necessity requires establishment of a public right of way for access to Buck Pond, one of the Hampton Ponds, lying in the city of Westfield.

Buck Pond, together with others of the Hampton Ponds, so called, was surveyed in 1923 by the Department of Public Works and found to be in substantially its natural state with an area of 23.5 acres, thus affirming its status as a great pond of the Commonwealth.

There is no land in public ownership on the shore of Buck Pond and no public ways run to the pond.

The only public way in any proximity to the pond passes to northward and northwestward, and at its nearest point almost reaches the pond.

As in the case of other hearings which have been held on such petitions in the past year, the need under present-day conditions to provide for parking in conjunction with access routes to the great ponds was indicated to be almost equal to that for the rights of way, themselves.

Upon consideration of the information and evidence presented at the public hearing, and that obtained by further investigation, the Board finds that no public right of way for access to Buck Pond exists at present and that establishment of such a way is necessary and desirable.

The Board recommends that the County Commissioners of Hampden County be directed to lay out a public right of way for access to Buck Pond, and an area for parking contiguous thereto, in such location as may be determined to be suitable, and submits the attached bill for carrying out this recommendation.

Respectfully submitted,

DEPARTMENT OF PUBLIC WORKS.

A. N. DiNATALE,
Commissioner.

FRED B. DOLE,
LEWIS J. FRITZ,
Associate Commissioners.

RODOLPHE G. BESSETTE,
Director, Division of Waterways.

DEPARTMENT OF THE ATTORNEY GENERAL.

WILLIAM J. ROBINSON,
Assistant Attorney General.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Fifty-Eight.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A RIGHT OF WAY
FOR PUBLIC ACCESS TO BUCK POND IN THE CITY OF WESTFIELD
AND OF AN AREA FOR THE PARKING OF VEHICLES CONTIGUOUS
TO SAID RIGHT OF WAY.

*Be it enacted by the Senate and House of Representatives in General
Court assembled, and by the authority of the same, as follows:*

1 SECTION 1. The county commissioners of Hampden county
2 are hereby authorized and directed to lay out a right of way for
3 public access to Buck pond in the city of Westfield and an area
4 for the parking of vehicles contiguous thereto in accordance with
5 plans to be approved by the department of public works and
6 showing the location and dimensions of said right of way and
7 parking area. If it is necessary to acquire land for the purpose
8 of laying out such right of way or parking area, said county
9 commissioners shall at the time such right of way or parking
10 area is laid out take such land by eminent domain under chapter
11 seventy-nine of the General Laws. Any person sustaining
12 damages in his property by the laying out of such right of way
13 or parking area, or by specific repairs or improvements thereon,
14 shall be entitled to recover the same under said chapter seventy-
15 nine; provided, that the right to recover damages, if any, by
16 reason of the laying out of such right of way or parking area
17 shall vest upon the recording of the order of taking by said
18 county commissioners and that no entry or possession for the
19 purpose of constructing a public way on land so taken shall be
20 required for the purpose of validating such taking or for the
21 payment of damages by reason thereof.

1 SECTION 2. The city of Westfield from time to time may make
2 specific repairs on or improve such right of way or parking area
3 to such extent as it may deem necessary, but neither the county

4 of Hampden nor any city or town therein shall be required to
5 keep such right of way or parking area in repair, nor shall it be
6 liable for injury sustained by persons traveling thereon; pro-
7 vided, that sufficient notice to warn the public is posted where
8 such way enters upon or unites with an existing public way.

1 SECTION 3. All expenses incurred by said county commis-
2 sioners in connection with such right of way or parking area
3 shall be borne by the county of Hampden, or by such cities and
4 towns therein, and in such proportions as said county commis-
5 sioners may determine.

1 SECTION 4. Said right of way or parking area shall not be
2 discontinued or abandoned without authority therefor from the
3 general court.

1 SECTION 5. Nothing in this act shall be construed to limit
2 the powers of the department of public health, or any local
3 board of health, under any general or special law.

The Commonwealth of Massachusetts

**SPECIAL REPORT OF THE DEPARTMENT OF PUBLIC
WORKS RELATIVE TO A RIGHT OF WAY FOR PUBLIC
ACCESS TO HORSE POND IN THE CITY OF WEST-
FIELD.**

DEPARTMENT OF PUBLIC WORKS,
100 NASHUA STREET, BOSTON 14, December 31, 1957.

*To the Honorable Senate and House of Representatives of the Commonwealth of
Massachusetts.*

The Joint Board, constituted under the provisions of section 18A of chapter 91 of the General Laws, submits the following report relative to a right of way for public access to Horse Pond, one of the Hampton Ponds, situated in the city of Westfield.

Section 18A of chapter 91 of the General Laws provides:

Upon petition of ten citizens of the commonwealth that in their opinion public necessity requires a right of way for public access to any great pond within the commonwealth, the department and the attorney general or a representative designated by him sitting jointly shall hold a public hearing and receive such evidence thereon as may be presented to them. The joint board may make such additional investigation as it deems desirable and if it appears to said board that such a right of way exists it shall present a petition to the land court for registration of the easement. If it appears that no right of way exists it shall submit a report, together with recommendations thereon, to the general court on or before January first of the following year. This section shall not apply to any body of water used as a source of water supply by the commonwealth or by any town or district, or water company, nor shall it affect the right of the commonwealth or any town or district or water company to the use and control of the waters of any such pond for the purpose of a water supply, nor shall it affect or diminish any existing right to the use of the water of any such pond for mercantile or manufacturing purposes.

Pursuant to the statute a petition suitably signed was filed with the Department of Public Works representing that public necessity requires establishment of a public right of way for access to Horse Pond, one of the Hampton Ponds, lying in the city of Westfield.

Horse Pond is a great pond of the Commonwealth having been surveyed by the Department of Public Works in 1923. The survey showed the natural pond of 23 acres to be increased in size by a dam at its outlet.

Numbered Route 202 touches this pond in passing along its northerly end, but at a location where a cable guard rail and dangerous traffic conditions exist.

Other than this there is no publicly owned land on the pond and no public roads reach it. There is no public road near by the pond to westward, while to eastward the nearest is over 1,500 feet distant. At the southerly end of the pond a public road passes some 500 feet distant.

As in other instances the need was stressed for parking space in conjunction with any right of way to be established.

Upon consideration of the information and evidence presented at the public hearing and that obtained by further investigation, the Board finds that no public right of way suitable for access to Horse Pond exists at present and that establishment of such a right of way is necessary and desirable.

The Board recommends that the County Commissioners of Hampden County be directed to lay out a public right of way to the edge of Horse Pond as existing in its natural state, and an area for parking contiguous thereto, in such location as may be determined suitable, and submits the attached bill for carrying out this recommendation.

Respectfully submitted,

DEPARTMENT OF PUBLIC WORKS.

A. N. DiNATALE,
Commissioner.

FRED B. DOLE,
LEWIS J. FRITZ,
Associate Commissioners.

RODOLPHE G. BESSETTE,
Director, Division of Waterways.

DEPARTMENT OF THE ATTORNEY GENERAL.

WILLIAM J. ROBINSON,
Assistant Attorney General.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Fifty-Eight.

AN ACT PROVIDING FOR THE ESTABLISHMENT OF A RIGHT OF WAY FOR PUBLIC ACCESS TO HORSE POND IN THE CITY OF WESTFIELD AND OF AN AREA FOR THE PARKING OF VEHICLES CONTIGUOUS TO SAID RIGHT OF WAY.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. The county commissioners of Hampden county
2 are hereby authorized and directed to lay out a right of way for
3 public access to Horse pond in the city of Westfield and an area
4 for parking contiguous thereto, in accordance with plans to be
5 approved by the department of public works and showing the
6 location and dimensions of such right of way and parking area.
7 If it is necessary to acquire land for the purpose of laying out
8 said right of way or parking area, said county commissioners
9 shall at the time such right of way or parking area is laid out
10 take such land by eminent domain under chapter seventy-nine
11 of the General Laws. Any person sustaining damages in his
12 property by the laying out of such right of way or parking area,
13 or by specific repairs or improvements thereon, shall be entitled
14 to recover the same under said chapter seventy-nine; provided,
15 that the right to recover damages, if any, by reason of the laying
16 out of such right of way or parking area shall vest upon the re-
17 cording of the order of taking by said county commissioners and
18 that no entry or possession for the purpose of constructing a
19 public way on land so taken shall be required for the purpose of
20 validating such taking or for the payment of damages by reason
21 thereof.

1 SECTION 2. The city of Westfield from time to time may
2 make specific repairs on or improve such right of way or parking
3 area to such extent as it may deem necessary, but neither the
4 county of Hampden nor any city or town therein shall be re-

5 quired to keep such right of way or parking area in repair, nor
6 shall it be liable for injury sustained by persons traveling thereon;
7 provided, that sufficient notice to warn the public is posted
8 where such way enters upon or unites with an existing public way.

1 SECTION 3. All expenses incurred by said county commis-
2 sioners in connection with such right of way or parking area shall
3 be borne by the county of Hampden, or by such other cities
4 and towns therein, and in such proportions as said county com-
5 missioners may determine.

1 SECTION 4. Said right of way or parking area shall not be
2 discontinued or abandoned without authority therefor from the
3 general court.

1 SECTION 5. Nothing in this act shall be construed to limit
2 the powers of the department of public health, or any local
3 board of health, under any general or special law.

June 17, 1958 (Mr. Douds here).

Bills on rights of way rejected last week and an effort is to be made to re-open them on Wednesday, June 18, 1958.

People around Horse, Buck and Pequot Lakes are anxious to know size of parking lots connected with each right-of-way.

George Urban, Legislative Agent for the Council of Sportsmen's Clubs for Hampden County came in during the afternoon and talked with Comm Stapleton over the telephone. Mr. Stapleton will telephone Senator Burkhart relative to this matter, tomorrow, June 18, 1958.

Treasurer
D. Bodurtha
27 Leonard Street
Agawam, Mass.

President
F. A. Lonczak
26 Riverview Terrace
Chicopee, Mass.
Tel. LY 4-6769

Secretary
~~E. C. Vasa~~ address
~~144 River Road~~ below
Springfield, Mass.
Tel. Spfld. RE 6-6149

Ludlow Fish and Game
Association, Inc.
West Springfield Fish and
Game Club
Wilbraham Fish and Game
Club, Inc.
Springfield Sportsman's
Club, Inc.
Springfield Revolver Club
Pioneer Valley Sportsmans Club
Saltwater Sportsmens Club
of Western Mass.
Holyoke Beagle Club
Spalding Fish and Game Club
Westfield Sportsmans Club



Agawam Sportsmans Club, Inc.
Chicopee Rod and Gun Club
Fairview Fish and Game
Association, Inc.
Holyoke Fish and Game Assn., Inc.
Western Massachusetts Beagle Club
Westfield Beagle Club, Inc.
Hampden County Women's
Rod and Gun Club, Inc.
Chester Rod and Gun Club
Mawaga Sporting Club
Chicopee Sportsman's Club
Chicopee Archers
Southwick Saddle and Stream Club
Agawam Bowmen

The Council of Sportsmen's Clubs of Hampden County

March 30, 1959

Commissioners of
Hampden County
Hampden County Court House
Springfield, Mass.

Gentlemen;

At the march meeting of this organization the secretary was instructed to inform you of the recommendations of the body regards the proposed rights of way for public access to Forest Lake, Buck Pond and Horse Pond.

The sights for entrance and parking suggested at Buck pond met with 100% approval. The proposed entrance and parking sights at Horse pond were considered adequate, provided that if entrance to Pequoit Pond was difficult or impracticable consideration would be given to a separate entrance to that pond at a future date....under the proviso as set down by the legislature.

The organization was not satisfied with the proposals made at the hearing at Forest Lake. The problem of going thru the culvert at summer low water plus the rank growth of weeds and pond lillies in the small pond (north side of river st.) plus the possible use of the area for parking by other than fishermen and boat men makes this sight on the undesirable side. The council felt that an extension of fill on the right hand side of river st. wide enough for entrance and parking would be much more usefull.

We trust that you will give this latter your due consideration

THE COUNCIL of SPORTSMEN'S CLUBS
of
HAMPDEN COUNTY

GEORGE E. URBAN
145 Manchester Terrace
Springfield 8, Mass.

very truly yours,
George E. Urban
George E. Urban, Sec. protom

GEORGE E. URBAN
145 Manchester Terrace
Springfield 8, Mass.

Treasurer
D. Bodurtha
27 Leonard Street
Agawam, Mass.

President
F. A. Lonczak
26 Riverview Terrace
Chicopee, Mass.
Tel. LY 4-6769

Secretary
H. C. Yess
164 Main Street
Southwick, Mass.
~~164 Main Street~~
~~Southwick, Mass.~~
address
below

Ludlow Fish and Game
Association, Inc.
West Springfield Fish and
Game Club
Wilbraham Fish and Game
Club, Inc.
Springfield Sportsman's
Club, Inc.
Springfield Revolver Club
Pioneer Valley Sportsmans Club
Saltwater Sportsmens Club
of Western Mass.
Holyoke Beagle Club
Spalding Fish and Game Club
Westfield Sportsmans Club



Rec'd
4-6-59

Agawam Sportsmans Club, Inc.
Chicopee Rod and Gun Club
Fairview Fish and Game
Association, Inc.
Holyoke Fish and Game Assn., Inc.
Western Massachusetts Beagle Club
Westfield Beagle Club, Inc.
Hampden County Women's
Rod and Gun Club, Inc.
Chester Rod and Gun Club
Mawaga Sporting Club
Chicopee Sportsman's Club
Chicopee Archers
Southwick Saddle and Stream Club
Agawam Bowmen

The Council of Sportsmen's Clubs of Hampden County

April 2, 1959

Department of Public Works
Division of Waterways
100 Naahua St.,
Boston, Mass.

Gentlemen:

Please find enclosed one of three (30) copies of the necessary petitions for the establishment of a right of way for public access to Sherman Pond, Brimfield, Mass. Kindly give this petition the same attention which we have been privileged to receive in the past.

I have also been requested to obtain copies of your departments reports on surveys of great ponds. The last one that we have is that for the year of 1955. Any reports since that date would be of utmost interest to this organization.

Thank you for your prompt attention.

Very truly yours,

George E. Urban, Sec. pro-tem

copy Attorney General and County Comm.

To the Attorney

To the Department of Public Works
and to the Attorney General of the
Commonwealth of Massachusetts:

The undersigned, ten citizens of Massachusetts, respectfully represent that in their opinion necessity requires a right of way for public access to the shores of **Sherman Pond** a great pond in the **Town** of **Brimfield** and request that a public hearing be held by the joint board under the provisions of Section 18 A of Chapter 91 of the General Laws, Tercentenary Edition, and such further action taken by said board as may be necessary under the provisions of said statute.

Name	Street Address	Town City	County
Stanley Swartz	128 West St	Spfld	Mass Hampshire
William F. Welton	235 East St.	"	"
Albert K. Dodge	111 Ardmore St	"	"
Arthur W. Desotell	36 Grove St.	Palmer	Mass Hampden.
Walter Reavey	828 Wall St	Spfld.	Mass Hampden
James L. Lillis	808 Alden St	"	"
William L. O'Brien	17 Cornwall St.	Spfld	Mass Hampshire
John Hopkins	447 No. Main St.	Palmer.	Mass
Mary Jewett	128 West St.	Spfld	Mass
Thomas Cavanaugh	20 Belavia	"	"
Emile C. Dauphinais	126 Windsor	Andover	Mass
Florian E. Siczekowski	154 North St.	Ware,	Mass
Frank W. Zemanek	51 Milton St	Indian Orchard	Mass
George E. Urban	145 Manchester Terr.	Springfield,	Hampden, Mass

Copy

April 7, 1959

James J. Sullivan, Supt.,
Department of Streets and Engineering,
Municipal Building,
Springfield, Massachusetts.

Dear Mr. Sullivan:

In 1955, by courtesy of your Department, signs were made and installed at the public access to Loon Pond, Lake Lorraine and Five Mile Pond in the City of Springfield.

It has been noted that these signs have disappeared from their locations and the County Commissioners of Hampden County would be most appreciative if your Department would have these signs replaced and re-installed.

It would also be appreciated if your Department would make up two similar signs, one for public access to Nine Mile Pond in the Town of Wilbraham and the other for Chapin Pond in the Town of Ludlow.

I shall be very happy to discuss these matters with you or any member of your Department.

Very truly yours,

CCUNSEL FOR HAMPDEN
COUNTY COMMISSIONERS.

WJF/N

Hampden Dam Inspections - 1957- 1969



1957 Reports

Inspections by Tighe & Bond.

City/Town	Hampden
-----------	---------

Dam	Gleason Dam
-----	-------------

Dam	Carter Dam
-----	------------

Dam	Labonte Dam
-----	-------------

Dam	Rockwell Dam
-----	--------------

Dam	Moriarty Dam
-----	--------------

Dam	Enslin Dam
-----	------------

Dam	Sazama Dam
-----	------------

Dam	Stalker Dam
-----	-------------

Dam	Ingle Dam
-----	-----------

Dam	Kibbe Dam
-----	-----------

Dam	Worthing Dam
-----	--------------

Dam	Peterson Dam
-----	--------------

Dam	Chaffin Dam & Dike
-----	--------------------

Dam	Goodwill Dam
-----	--------------

Dam	Kibbee Dam
-----	------------

Dam	Driscoll Dam
-----	--------------

Dam	Kellogg Dams
-----	--------------

Streets	Wilbraham Road
Streets	Somers Road
Streets	Main Street
Water	Scantic River
Water	East Brook
Water	Big Brook
Water	Mill River

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

CD Hampden

Jan. 31, 1957

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Gentlemen:

Inspections carried on in the Town of Hampden during the year 1956 have resulted in all dams in that community having been examined one or more times during the year. The following is a report on the condition of the various dams situated in Hampden.

A. Carter Dam. This is a small masonry and earth embankment dam situated on Big Brook in the northerly portion of Hampden at the town line between Hampden and Wilbraham. The dam was constructed a few years ago and the pond formed is used for private recreational purposes. The dam is small and the spillway is a notch in the concrete portion of the dam at about the center of the structure. In the flood of August 1955, damage occurred at this dam. A washout was caused by the flood. Repairs have been made to the structure and certain work still remains to be done. Based upon all factors involved, conditions at this dam are satisfactory, since the quantity of water ponded is very small.

B. Sazama Dam. This is a small earth and masonry dam located on a tributary to Big Brook at a point westerly of North Road in the northerly portion of Hampden. The dam forms a pond used for private recreational and agricultural purposes. In the flood of August 1955, the dam was topped by the flood water. No damage occurred as a result of this condition. When last inspected, this dam was noted to be in fair condition. Concrete masonry is disintegrating somewhat but the condition is not serious. The Owner has been doing maintenance on the dam recently and the general condition is such as to be satisfactory for the present time.

C. Goodwill Dam. This is an earth and stone masonry dam located on East Brook at a point westerly of Monson Road in about the central portion of Hampden. The dam forms a pond known as Goodwill Pond. This pond has been used for recreational and agricultural purposes for a number of years. During the flood of August 1955, this dam was topped by the excess storm flow and a breach was washed thru the central section of the dam. This breach is quite large in size and provides a free waterway for the passage of the brook flow. When last inspected, this dam was still breached and no water was ponded. The undersigned discussed this dam with the Owners during the summer of 1956 and it is apparent that the

The Hon. the Board of County Commissioners
Springfield, Mass.

Jan. 31, 1957

dam will probably not be repaired. When last inspected, the breach still provided a free waterway for the passage of the brook flow.

D. Rockwell Dam. This is a fairly large masonry and earth structure located on a tributary to Scantic River at a point just upstream from Rockadundee Road, in the southeasterly portion of Hampden. The pond formed has been used for private recreational purposes. In the flood of August 1955, this dam was topped by a substantial flow of water. The spillway and the dam proper were not damaged as a result of this flood. Washouts did occur on the right bank of the stream immediately below the dam. When last inspected, this dam was found to be in good condition. The gate thru the dam was open and no pond was being formed.

E. Moriarty Dam. This was a very small dam situated on Scantic River just easterly of Hancock Road in the southeasterly portion of Hampden that never ponded very much water. In fact, for years it has been nothing more than a low insignificant obstruction to the flow of water in the stream. The flood of August 1955, washed out this very small dam and when the site was last inspected, there was little evidence of this structure ever having existed.

F. Enslin Dam, now Ingle Dam. This is a small earthen structure situated on West Brook at a point westerly of McCray Road about one mile upstream from the center of Hampden. The dam has been used to form a pond for private recreational and agricultural purposes. This dam was topped by the flood water of August 1955, but no damage of consequence occurred at the structure. When last inspected, the dam was found to be in relatively good condition.

G. Stalker Dam. This is a stone masonry dam situated on Scantic River, in the central portion of Hampden just downstream from the bridge leading from Hampden Center to both South Road and Chapin Road. In the flood of August 1955, a tremendous quantity of water flowed over this dam and around the abutments. In spite of this condition, only minor damage occurred to the structure. Some of the capstones of the dam were washed away but, in general, the dam was in fair shape following the flood. When last inspected, the dam was still in reasonably good condition. Repairs had not been made to replace the missing capstones and certain debris had not been removed from the area of the dam. This condition is not serious and the dam seems satisfactory as existing for the present time.

H. LaBonte Dam. This is a fairly large stone masonry dam situated in the Scantic River downstream from the dam just described and

The Hon. the Board of County Commissioners
Springfield, Massachusetts

Jan. 31, 1957

just southeasterly of Main Street. This dam formerly provided a source of power for industrial purposes. During the flood of August 1955, the right abutment area of this dam was completely washed out. The area that was washed out is at the right of the dam near the headworks of the old canal system. The canal, gate structure, and walls were also washed out in such a manner as to provide a free waterway for the passage of the Scantic River water around the right side of this dam. Some of the stone masonry work was also washed out from the top of the dam, near its central section. When last inspected, this dam was still in the same condition. The breach around the right end of the dam provides for a free waterway for the flow of the Scantic River. If this dam is not going to be repaired or replaced, it would seem advisable to breach the central portion of the dam in order to allow the flow of the Scantic River to pass straight thru the dam site and not be diverted to the right. Further recommendations will be made on this matter if no action is taken by the Owners in the near future.

I. Worthing Dam. This is a very low concrete masonry wall built across Scantic River at the point just upstream from where Scantic River crosses under Somers Road. The dam is nothing more than a curb wall placed across the bed of the stream to prevent erosion and stabilize the bed for the purpose of providing a small pool at the rear of the property of Worthing. This pool is used for aesthetic and private recreational purposes. Damage to the general area was caused by the flood of August 1955. This damage has been repaired and conditions returned to normal at this site. For all practical purposes, no water is ponded behind this curb wall dam.

J. Kellog Dams. These dams are two in number and are located on a small brook that is a tributary to Mill River. The dams are located easterly of Wilbraham Road, in the north central portion of Hampden. These dams apparently have been used in the past for private recreational and agricultural purposes. The upper of the two dams consists of a masonry wall forming a small pond that for years has been completely silted and no water is ever stored. This dam is in reality nothing more than an earth retaining wall and for a few years now has not been considered as a dam. It is quite low in height and its failure would not contribute any water to the valley below. The lower dam is a concrete masonry structure forming a small pond. The spillway is located at about the central portion of the structure. In the flood of August 1955, this masonry dam was topped by the flow of water but no damage of consequence occurred as a result of this condition. The dam withstood the flood very well. When last inspected, it was noted that the dam is now owned by a Harold Koncitik of Wilbraham Road in Hampden. At the time of the last inspection, the water in the pond was approximately 4-inches from the top of the concrete masonry of the dam. Spillway flash-

The Hon. the Board of County Commissioners
Springfield, Mass.

Jan. 31, 1957

boards were still in place. The owner was instructed to remove these flashboards. The new owner should be informed in writing about removing the flashboards each fall and not replacing them until after the spring run-off. Also, if the dam is to be maintained, repairs should be made to the concrete that is beginning to disintegrate.

K. Kibbe Dam. This is a very small dam situated in the southerly portion of Hampden just easterly of Somers Road. The dam forms a pond that is used for private recreational purposes. The dam is an earth embankment and is fairly long but very low in height. In the flood of August 1955, the dam was topped just a little by the flood water. No damage occurred to the structure as a result of this flood. When last inspected, this dam was found to be in good condition.

L. Driscoll Dam. This is a small earth dam located immediately downstream from the dam just described and immediately adjacent to the easterly side of Somers Road. The pond formed by the dam is quite small and was used formerly for power purposes. In the flood of August 1955, a washout occurred at the right side of the spillway. The spillway itself is a stone masonry structure. As a result of the washout, no pond was formed following the flood. The washout thru the dam has been satisfactorily repaired and the old stone masonry spillway has been concreted and repaired as well. A canal leading from the pond to an old mill site is still active and a small quantity of water flows thru this canal.

M. Chaffin Dam and Dike. The Chaffin Dam and Dike form ponds on a tributary to the Scantic River in the vicinity of Mill Road situated in the generally southwesterly portion of Hampden. The structures are earth embankments and the spillway at the main dam is of stone masonry construction. In the flood of August 1955, no damage of consequence occurred at the dam or at the dike. The dam was topped a little but no washing out of any of the earth embankment occurred. The storage pond formed by the dike overflowed the dike a little but no washout of this embankment occurred either. When last inspected the dam and dike were found to be in good condition. The spillway thru the dam has a steel rack in front of the overflow section and in front of this rack there is a fine screen causing the collection of leaves and small debris which in turn results in an increase in the water level in the pond. This fine screen should not be used in connection with this spillway.

The Hon. the Board of County Commissioners
Springfield, Mass.

Jan.31,1957

There are thirteen dams inspected annually in Hampden. Of this number four (4) were washed out in part by the flood of August 1955. Three (3) of these dams have not been repaired. These are the Goodwill Dam, the LaBonte Dam and the Moriarty Dam. It is doubtful if these structures will be repaired or replaced.

Respectfully submitted

George H. McDonnell
County Hydraulic Engineer

GHM/cmb

GEORGE H. MC DONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON
TEL. JEFFERSON 3-3991

TIGHE & BOND
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS

CIVIL, SANITARY AND
ELECTRICAL ENGINEERING
SUPERVISION OF CONSTRUCTION
AND OPERATION
INVESTIGATIONS, REPORTS,
PLANS AND SPECIFICATIONS

CD Hampden

Nov. 5, 1958

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Inspections carried on in the Town of Hampden throughout the year 1958 have resulted in all dams in that community being examined at least once. The following is a report on the condition of the various dams situated in Hampden.

A. Carter Dam

This dam is still breached and repair work has not been carried on to completion. The breach thru the dam is at the left end. This dam was constructed prior to the flood of August, 1955. Certain needed maintenance work had been pointed out previously. Since the dam apparently is being abandoned and no repairs are being continued by the owner, it would seem that the decree in connection with the construction of this small dam should be discharged and the owner notified that before the dam is rebuilt or repaired, new plans and specifications of the construction should be filed.

B. Sazama Dam

This structure is in a dilapidated state but is not dangerous. The concrete masonry is in need of repair. Some brush has been cut from the dam embankment but there is more brushing and clearing needed. No repairs of any consequence have been made at this structure in the recent past. The owner should plan to repair the masonry and to cut brush from the embankment of the dam during the coming year. The work as outlined is not necessary for the safety of the structure but is recommended if the owner wishes to maintain his dam in a reasonable state of repair.

C. Goodwill Dam

No repairs have been made at this dam. There is a wide breach thru the structure to allow for the passage of flood flows.

D. Rockwell Dam

This dam was found to be in good condition. There is some leakage thru the base of the right abutment wall. However, no fines are noted in the leakage and the ground at the abutment wall seems solid and is not spongy. This leakage is not dangerous and will be checked in the future for any change.

A tall oak tree growing from the left abutment should be cut down and the root system killed before the tree and its roots do damage to the stone masonry wall.

E. Ingle Dam (Formerly Enslin Dam)

This dam was found to be in satisfactory condition. Stones in the embankment just downstream of the masonry wall form a protective gutter to carry away any overflow that takes place over the full length of the dam. The spillway is in good condition.

F. Stalker Dam

This dam is in the same condition as previously reported. More than 1/2 of the capstones are gone. The water behind the dam is thus about 12" lower as the result of the reduced height of the dam due to the missing capstones. The height of the dam is now only about 4 ft. The pond formed by the dam is negligible and though the structure is somewhat dilapidated it presents no danger to persons and property downstream.

G. LaBonte Dam

This dam is still breached at the right end as the result of the flood of August, 1955. The full flow of the Scantic River passes thru the breach around the dam. The adjacent roadway to the north is still not endangered by the water being diverted around the dam. In fact, the action of weather and stream flow on the end of the dam itself seems to be eating away at the dam and widening the breach thru the removal of stones from the dam itself. Storm flows no doubt will widen the breach on the dam side and thus decrease any danger to the road.

H. Worthing Dam

This masonry structure is in excellent condition. There is an 8" flashboard on the downstream curb wall that forms the small pond. According to records in my office, no request for approval of flashboards has ever been made by the owner. This matter will be investigated to determine whether or not the 8" flashboards were included in the original design.

I. Kellog Dams

The Kellog Dams are apparently now owned by a Harold Koncitik. From our records his address is Wilbraham Rd. , Hampden, Mass.

1. Upper Dam The pond behind the dam is completely filled in with soil and no water is stored. The stone masonry dam is now nothing more than an earth retaining wall. Water of the brook cascades over the wall. The wall is disintegrating and in part is falling over. No dangers exist to persons and property downstream since the dam does not pond water.
2. Lower Dam Stop logs in the spillway notch completely close the spillway and as the result, except for leakage thru the stop logs, all water passes over the masonry dam itself. The stop logs should be removed and weaker stop logs set in their place. These stop logs should be designed to fail and wash out before ponded water reaches the full height of the dam. No stop logs should be in place on this dam from fall thru the spring months.

The spillway and dam masonry is beginning to disintegrate and repairs should be made, particularly to the spillway chute. Soil washed away from the downstream face of the dam by the 1955 flood should be replaced.

J. Kibbe Dam

The dam and spillway were found to be fairly good condition. The downstream toe is quite swampy. However, this wet condition has always been noticed in the past.

K. Driscoll Dam

This dam was found to be in good condition. Both spillways are in a satisfactory state of repair.

L. Chaffin Dam and Dike

1. Dike This structure was found to be satisfactory. The embankment is becoming weathered and worn down in certain areas. However, the dike is O.K. for the time being.
2. Main Dam The culvert spillway at the south end of the dam is wide open and was passing the full flow at the time of the last inspection. Improvements have been made to the main spillway and to the masonry at the screen and bar rack. The side spillway is free and wide open. This is the spillway that handles emergency overflows. The dam embankment was found to be in satisfactory condition.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "G. H. McDonnell", written over a horizontal line.

George H. McDonnell
County Hydraulic Engineer

GHM/mb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Hampden
October 22, 1969

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

All the dams situated within the Town of Hampden have now been inspected at least once during the year 1969. The following is a report on the general condition observed at the various dams situated within Hampden.

A. Sazama Dam

This dam was noted to be in need of routine maintenance and repair work. The embankment is overgrown with brush and vines. The growth is so thick on the downstream side that it was hard to make an inspection of this portion of the dam. Settled sections of the top of the embankment should be filled with impacted earth and brought up to a finished grade.

Broken and missing sections of the upstream concrete wall should be replaced. Masonry at the spillway should be repaired where needed.

Water level in storage on the day of inspection was at about spillway crest elevation. There were no flashboards on the crest of the spillway.

It has been observed and reported in recent years that the dam is given very little maintenance. The undersigned feels that if the owner wishes to protect his investment, the suggested maintenance outlined hereinbefore should be accomplished in the not too distant future. Preferably this fall and winter if possible. The dam will continue to deteriorate and eventually the structure may be worthless, unless it is properly maintained.

The dam does not impound a great deal of water. Should the dam fail, the quantity of water released would undoubtedly be absorbed in the valley immediately downstream. A culvert under North Road would control the amount of water released

TIGHE & BOND CONSULTING ENGINEERS

to the valley below and the road itself would act as a temporary dam to store released water in the natural valley upstream of the road.

It is recommended that the owner again be advised of the general condition of his dam. He should at least clear the brush and vine growth, repair the upstream masonry wall, repair the spillway masonry and bring the embankment up to proper grade.

B. Rockwell Dam

This stone masonry dam was noted to be in satisfactory condition. The small flashboard and the old screen and pipe railing were present on the crest. The screen is quite dilapidated. On the day of inspection water level was passing over the flashboard.

There is a small leak at the base of the right abutment stone masonry directly in front of the dam. No soil is being washed out with the leak and no settlement was observed on the surface of the ground back of the abutment wall.

There is some erosion of the right abutment masonry at the right end of the dam crest. This condition is not dangerous at present but it should be repaired before the erosion extends further into the masonry. The left abutment and gate structure are in fair condition. Surface erosion of the concrete is quite extensive but is not deep enough to be of any serious concern.

The corner of the masonry in front of the gate structure on the right side is undercut and repairs should be made.

Some seepage and leakage still occurs at the left abutment but it is not serious. The gate leaks a bit but not very much.

In the opinion of the undersigned, the dam is safe. It might be well to advise the owner of the minor masonry repairs that should be made to prevent further extension of the erosion and to prevent the necessity of more serious and expensive repairs at a later date.

TIGHE & BOND CONSULTING ENGINEERS

C. Peterson Dam (now Terry)

The dry stone wall at the right side of the spillway channel is collapsing and repairs should be made before the entire wall collapses and the earth embankment begins to be washed away by flood flows passing over the spillway. Also, the face of the spillway on the downstream side has a large eroded area which should be repaired.

At the right corner of the spillway, upstream end, the embankment has settled and apparently a portion of the embankment material has been washed into the spillway, through the dry stone masonry, by surface run-off. Repairs should be made at this point before further damage to the embankment results.

The foot-bridge over the spillway is in poor condition and a portion of the bridge is missing.

There were no flashboards on the spillway crest on the day of inspection and water level in storage was at crest elevation.

No brush was growing on the dam embankment and the sod cover was fair to good. The toe of the dam was o.k. and very little seepage was noted.

In the opinion of the undersigned the repairs as recommended should be made if the dam is to be maintained. Failure to make repairs, particularly to the dry stone wall on the right side of the spillway could result in loss of the dam under flood flow conditions. Since the quantity of water stored is small and the length of the stream valley below the dam to where development exists exceeds one-half mile, there is very little danger that damage would ever be done to property or that persons would be injured as result of the loss of the dam. However, the owner should protect his investment by making the repairs as recommended.

D. Stalker Dam

This dam is in the same general condition as reported in previous years. All capstones on the central section and the entire left section of the dam are missing. They have been washed or moved off of the crest and deposited in the stream directly in front of the dam.

The right abutment masonry is in fair condition. The left abutment is very poor. Flood flows have washed through and around the left abutment in past years causing displacement of abutment stones and the wash-out of some of the abutment earth.

On the day of inspection water level in storage was at the elevation of the existing stone crest of the dam. This is the crest with capstones removed.

The basic stone masonry of the dam itself was found to be in satisfactory condition. The dam is very low in height, being only about 4 ft. above the bed of the stream. Because the dam is low and it ponds an insignificant quantity of water, loss of the structure would have little or no effect whatsoever on flood flows downstream. Even if the dam happened to become breached as result of failure under normal stream flow conditions, the small quantity of water that would suddenly be released could be absorbed by the stream valley without causing any downstream damage.

Because of the heavy stone construction of the remaining section of this small dam, it is doubtful if it will ever fail suddenly. In the opinion of the undersigned this dilapidated dam does not endanger persons and property downstream.

E. LaBonte Dam

This breached dam is in about the same condition as reported in recent years. The breach is at the right end of the dam and will become wider with the passing of time as a result of erosion caused by flood flows unravelling some of the exposed stone masonry of the original dam structure situated to the left of the breach. The right side of the breach is highway fill and, when the highway was widened recently, heavy stone fill was placed in and above the bed of the stream. Flood flows washing through the breach will be prevented from damaging the highway fill by the heavy dumped stone fill.

F. Worthing Dam (now Gordon)

This is a very small low masonry wall built across Scantic River to prevent erosion in the bed of the river in the area adjacent to the former Worthing home now owned by Attorney Gordon. Hardly any water is stored by the small wall and a shallow pond is formed just upstream of the wall. The wall is well maintained, is in good condition and its existence does not in any way endanger persons and property downstream.

G. Gleason Dam

The asphalt apron forming an approach to the spillway tube is cracked. These cracks should be filled with an asphalt material to seal them and prevent the seepage of water under the asphalt apron.

The spillway tube is partly plugged at the lower end. An examination of the lower portion of the tube shows that up inside the tube there are brush, sticks, stones, debris and miscellaneous junk. The undersigned took two huge stones out of the spillway tube as well as an automobile tire, some branches and miscellaneous wood. It appears as if someone has been trying to plug the tube since much of the material, particularly small stones and dirt, have been packed into the tube from the downstream end. The tube should be inspected from time to time and kept clean.

The spillway notch in the upstream concrete wall is o.k. There was no stoplog in the notch nor was there any debris plugging the opening. The water level in storage was at the crest elevation of the notch.

The earth and processed stone fill of the embankment was o.k. The toe area was reasonably dry. Very little brush growth is occurring on the embankment.

The upstream concrete wall is eroded and cracked at the surface on the water-side face. Repairs done in the near future will prevent more extensive and deeper damage.

The owner should be directed to clean out the spillway tube immediately and to inspect the tube from time to time to be certain that it does not get plugged again. With the spillway tube cleaned and maintained in a clean condition the dam will be safe.

H. Kibbee Dam

This low earth embankment dam was found to be in its usual condition. There was no brush or tree growth on the embankment and it was covered with a good thick growth of sod. The embankment is low in height and its width is in proportion to the low height.

The toe area is wet but this condition is typical for the Kibbee dam. Little or no movement of the toe water was observed.

TIGHE & BOND

CONSULTING ENGINEERS

The small spillway chute was in fair condition. There was no flashboard in the crest and water level in the storage was at the crest elevation. There is some erosion of the concrete masonry both on the floor and the side-walls of the chute. Mr. Kibbee was present as I completed the inspection and I pointed out the desirability of repairing this masonry.

In the opinion of the undersigned the dam is safe. It does have a low freeboard and in time of extreme storm flow conditions water has passed over the entire embankment. However, because the owner does keep a good thick sod cover over the entire embankment, it safely passes extreme flows without any erosion developing.

I. Driscoll Dam

The earth embankment of this small dam is in good condition. It is covered with a good growth of sod. The toe area is dry. The main spillway is in fair condition and water level in storage was at the crest of this small spillway. Some erosion has occurred in the masonry of the spillway but it is not bad.

The small spillway at the right end of the dam embankment was plugged with leaves but was functional.

In the opinion of the undersigned this dam is safe.

J. Chaffin Dam and Dike

1. Dike

This dike was noted to be inactive in that hardly any water was behind the dike. The canal leading from Scantic River to the storage pond behind the dike and the canal leading out of the storage pond to the main dam and pond were both dry. It appears as if the canal and dike have been inactive all year.

The dike is in poor condition in that surface erosion has caused gullying and damage to the embankment. Also, large trees growing from the embankment could endanger the structure if it is reactivated.

2. Dam

For all practical purposes there was no water ponded by the dam. A very small pond probably representing less than five per cent of the pond capacity was observed in the basin behind the dam. Since the major source of water for the pond at the main dam is the canal facility, and since this canal is and apparently has been dry for

7.

**TIGHE
& BOND CONSULTING ENGINEERS**

sometime, it is natural that the pond at the main dam would be nearly dry. The main dam has had little or no attention of maintenance. It is overgrown with brush.

3. Canal

The undersigned walked the length of the canal from Mill Road to the point of its connection with Scantic River to determine the reason why river water no longer flowed thru the canal. It was observed that the bottom of the canal, in the vicinity of the Scantic River, is at a higher elevation than the water level in the Scantic River. Consequently, all of the water of the river bypasses the canal and continues downstream in the valley of the river.

In time of flood flow conditions in Scantic River it is possible that the water surface could rise to an elevation whereby the canal would again be charged with water and flood waters could flow the entire length of the inlet canal to the pond behind the dike and then follow the outlet canal to the pond at the main dam. Should this happen, the dike and dam could again pond water to full elevation and thus the dam and dike must be maintained so as to properly function in such an emergency.

However, if the owner blocked the canal on the northerly side of Mill Road by dumping a few loads of impacted gravel or semi-impervious soil into the canal, and filled the canal to the elevation of natural ground on each side of the canal, any flood flow filling the canal would not be able to flow under and across Mill Road to reactivate the dike and the main dam. This method of blocking the canal would be quite inexpensive and easy to do. It would prevent the possibility of damage caused by breach of the dike or the main dam should river flood flow conditions occur. Also, if the owner ever wished to repair and to reactivate the canal, dike and dam system, it would simply be necessary to dig out the soil plug in the canal northerly of Mill Road.

In the opinion of the undersigned the dam and dike will not be safe until the canal is adequately plugged.

Respectfully submitted

George H. McDonnell
County Hydraulic Engineer

GHM/ekd

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Hampden
December 30, 1969

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Re: Hampden Dams
Repeat Inspection

In accordance with your communications of October 29, 1969 to Mr. Maurice Chaffin regarding the dam, dike and canal located adjacent to Mill Road and to Alton E. Gleason Co., Inc. of Springfield, relative to the dam located easterly of Wilbraham Road a short distance south of the Wilbraham-Hampden town line, the undersigned re-inspected these dams on Monday, December 29, 1969 and reports as follows:

1. Chaffin Dike, Dam and Canal

The owner has taken no steps whatsoever to adequately plug the canal leading from Scantic River to the area of the dike and dam adjacent to Mill Road. In your communication, Mr. Chaffin was advised that in order to be certain that flood water entering the canal will be prevented from reaching the dike and dam, the feeder or supply canal extending from the Scantic River to the culvert under Mill Road should be plugged. You further advised Mr. Chaffin that it was not necessary to plug the length of the canal but to simply place a dike of compacted earth across the canal for the full depth of the canal. Mr. Chaffin was advised to place the dike before freezing weather.

In view of the fact that Mr. Chaffin has not followed the recommendations contained in your letter of October 29, 1969, the undersigned suggests that he be sent a registered letter directing that the plug of earth be placed in the canal adjacent to the Mill

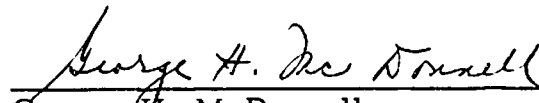
Road crossing of the canal at the entrance to the pond behind the dike and that the plug be placed no later than March 15, 1970.

A copy of the letter should also be sent to Mrs. Gertrude B. Chaffin of 150 Mill Road, Hampden, Mass.

2. Gleason Dam

Conditions at the Gleason Dam were found to be satisfactory. The spillway tube was functioning. Heavy snow cover prevented a thorough examination of the asphalt apron. In the opinion of the undersigned, this dam is in satisfactory condition.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/amd

Holland - Hamilton Reservoir Petition - 1956



1956 Reports

Holland Reservoir Association petition regarding levels after the flood of 1955.

City/Town	Holland
Water	Hamilton Reservoir

September 14, 1956

George H. McDonnell,
County Hydraulic Engineer,
Bowers and Pequot Street,
Holyoke, Mass.

Dear Mr. McDonnell:

We have received copies of petition
addressed to the Board of Selectmen of the Town of
Holland and the petition reads as follows:

To the Honorable Board of Selectmen of the Town of Holland,
in the County of Hampden, Commonwealth of Massachusetts,
and to all other interested persons and the proper Departments of the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, owners of real estate adjoining the ~~Hamilton~~ Reservoir, in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accomodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

By _____ Chairman.

WFS/N

PETITION

To the Honorable Board of Selectmen of the Town of Holland, in the County of Hampden, Commonwealth of Massachusetts, and to all other interested persons and the proper Departments of the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, owners of real estate adjoining the Hamilton Reservoir, in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accommodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

NAME OF OWNER

LEGAL ADDRESS

J. Davis	Holland Mass.
Eikel M. Davis	Holland Mass.
Erna M. Sawtelle	Holland, Mass.
Howard W. Sawtelle	Holland, Mass.
Mary E. Scanlon	Indian Orchard
Raymond Scanlon	Indian Orchard
Nancy H. Trask	Hartford Conn
Grace Andree	Hartford Conn
Ruth H. Trask	Hartford, Conn.
Adelard P. Belhumeur	Holland Mass
Simone Belhumeur	Holland Mass.
Arthur W. Burdick	Springfield Mass

To the Honorable Board of Selectmen of the Town of Holland, in the County of Hampden, Commonwealth of Massachusetts, and to all other interested persons and the proper Departments of the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, owners of real estate adjoining the Hamilton Reservoir, in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accommodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

NAME OF OWNER

LEGAL ADDRESS

G. Allison Wells	29 Newbury St. East Longmeadow ^{Mass}
Matthew D. Merrill	22 Essex St Springfield Mass
Ernest B. Blackwell	74 Florence St Wampeter Conn
Mary E. Blackwell	" " " " "
Hermine A. Martin	161 South St Southbridge Mass
Arthur J. Martin	161 South St Southbridge Mass
Lawrence W. Daniels	364 Main St West Spfg Mass
Roberta Daniels	" " " " "
Charles Gray	89 Penn. Ave. New Britain, Conn
Levin E. Peterson	74 Oak Grove Ave Spfld Mass
Beatrice T. Peterson	74 Oak Grove Ave Spfld Mass
Walter F. Rembley	9 East St. 3 Rivers Mass

Mrs William Burke.	68 Oak Grove Ave, Springfield Mass,
William J. Burke.	65 Oak Grove Ave Springfield Mass
John V. Kybur.	17 Grove St Chicopee Falls Mass,
Francis C. M. Guigan	Craig Rd. Holland, Mass.
Anna M. Guigan	Craig Rd. Holland Mass
Mr & Mrs. E. Ziesse	121 Madison St., Chicopee Falls,
Oswald J. Cibien	Old Acre Rd.
Gladys H. Cibien	Old Acre Rd.
Doris H. Babineau	Old Acre Rd
Earl P. Babineau	109 Magazine St Springfield
George L. Morris	41 Bliss St. Holyoke Mass.
Paul A. Harris	41 Bliss St. West Springfield Mass.
Levy J. Balboni	59 Milton St. Indian Orchard Mass
Harold T. Tyler	Davis Road
Gladys M. Tyler	Davis Road.
Alton Nadeau	101 Lyman St., Holyoke, Mass.
Mrs Alton Nadeau	101 Lyman St Holyoke, Mass
Annela Blanchette	Craig Rd.
Bonita Blanchette	Craig Rd.
Donald B. Stone	Craig Rd. Holland -
Gladys C. Stone	Craig Rd. Holland
Wilfred Pion	" " "
Kathryn M. Flaherty	Craig Rd. Holland
James R. Flaherty	Craig Rd. Holland

To the Honorable Board of Selectmen of the Town of Holland, in the County of Hampden, Commonwealth of Massachusetts, and to all other interested persons and the proper Departments of the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, owners of real estate adjoining the Hamilton Reservoir, in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accommodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

NAME OF OWNER

LEGAL ADDRESS

Elizabeth T. Wells	29 Newbury St. East Longmeadow, Mass.
Mrs. Marie Viola Driscoll	22 Essex St. Springfield
Raymond Mac Neil	55 Leslie St. Springfield Mass
Stella Mac Neil	55 Leslie St. Springfield Mass
Laurence H. Sweeney	612 North Main St. East Longmeadow Mass
Mrs. Laurence Sweeney	612 North Main St. East Longmeadow Mass
Arthur Beverland	45 Auburn St. Springfield Mass
Albert McDonald	14 Bernard St. Springfield
George Gaudet	11 Merwin St. Springfield Mass
Olivia Gaudet	11 Merwin St. Springfield Mass
Rudolph J. Wailgum	St. Petersburg Florida
Mrs. Barbara Adams	44 Miller Street Springfield Mass

~~Mr. and Mrs. Wm. H. Adams~~
 E. F. Adams 47 Miller St. Springfield Mass.
 Richard J. Berggren 38 Cornell St. Manchester Conn.
 Mrs. R. J. Berggren 38 Cornell St. Manchester Conn.
 Richard B. Brown RFD 2 Southbridge Mass.
 Mr. E. C. Hodgson RFD 2 Southbridge Mass.
 Mrs. Sylvia Berggren 45 Auburn St. Springfield Mass.
 Mr. Sheldon Fitch 4 Park Ave. Ware Mass.
 Mrs. James W. Neil 7 Kensington Ave. Springfield Mass.
 Arthur W. Olson Jr. 161 Morris St. Southbridge, Mass.
 Mrs. Julia Olson 161 Morris St. Southbridge Mass.
 Hugo Anschutz 30 + Boston Rd. Springfield Mass.
 Mr. William York Barclay St. Holland Mass.
 Mrs. Mary E. York Barclay St. Holland Mass.
 Mr. Eugene A. Demski 32 Riverview Terr. Chicopee Mass.
 Mrs. Catherine A. Demski 32 Riverview Terr. Chicopee Mass.
 Mrs. Philma M. Hale 262 Brackwood Blvd. Springfield Mass.
 Rosamond G. O'Neil 262 Brackwood Blvd. Springfield Mass.

Ray S. Chapin 65 Hughes St. Hartford, Conn.
By (P.O. Mail extra in law)

~~Mrs. Madeline M. Bly 58 Maple St. Boston~~

Mrs. Madeline M. Bly 58 Maple St. Am. East Longmeadow
By M. Swann sister in law. Massachusetts

To the Honorable Board of Selectmen of the Town of Holland,
in the County of Hampden and Commonwealth of Massachusetts, and
to all other interested persons and the proper Departments of
the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, Owners of real estate adjoining the Hamilton Reservoir in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accomodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

NAME of OWNER

LEGAL- ADDRESS

Leo Lawrence	84 Wilton St Springfield
Art DeMillia	35 Greenwich St. Springfield
Jean B Richard	261 Vineland Ave. Longmeadow Mass
Alfred R. Lamothe	RFD #2 Southbridge Mass.
Samuel L. Hurlbut	917 Main St. Southbridge Mass.
Josephine M. Hymelowski	917 W. Main St Southbridge, Mass
Walter L. Rooney	761 Rogers Ave. W. Springfield, Mass
Vivian L. Rooney	same
Harry D. Harris	50 Washington Road Springfield Mass
Stella L. Harris	Same.

Fred Ziba	Washpung Rd.	Holland Mass.
Albert E Perry	18 Ina St.	Springfield Mass
Mrs. Mildred F. Perry	18 Ina St.	Spfld, Mass.
Mr. Donald J La Plante	64 Orpheum Ave	Springfield
Mary J. La Plante	64 Orpheum Ave	Springfield, Mass.
Isidore D. Turso	100 Hartland St	Hartford Conn
Elizabeth L. Turis	100 Hartland St.	Hartford, Conn
Wm H. Bray	6 Kelsey Place	Bloomfield, Conn.
Randine Maud Bray	6 Kelsey Place	Bloomfield, Conn.
Fulton J. Kelly	284 Main St	Indian Orchard, Mass
Arthur L. Wimmers	84 Champlain St	Indian Orchard, Mass
Limby A. Wimmers	84 Champlain St.	" "
Ronald L. Henning	28 Lenox St	South Bridge
James S. Bettger	1120 Burnside Ave	East Hdd Conn
Lillian Bettger	1120 Burnside Ave.	E. Hdd. Conn
Mr Mrs Mildred Bettger	23 Myer St.	Swampscott
Stanley H. Bettger	23 Myer St	"
Ralph C. Cousineau	94 Parker St.	East Longmeadow
Walter A. Cousineau	" "	Mass
Rev. Raymond J. Page	5 Salem Sq.	Worcester, Mass.
Geo H. Gifting		Palmer Mass
Alfred J. de Alen		
James J. Montigny	157 Charlton St	
Lauretta Montigny	157 Charlton St	
Osborn B. Taber	24 Independence Ave.	Lexington, Mass.

To the Honorable Board of Selectmen of the Town of Holland,
in the County of Hampden and Commonwealth of Massachusetts, and
to all other interested persons and the proper Departments of
the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, Owners of real estate adjoining the Hamilton Reservoir in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accommodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam or a part thereof to be destroyed.

NAME OF OWNER

LEGAL ADDRESS

Stanley J. Skowron	32 School St Palmer Mass
Lester M. Thomas	68 Water St Palmer Mass
Richard W. Thomas	63 Birchland Ave East Longmeadow
William C. Thomas	63 " " "
Walter L. Wolcott	107 Prospect St E. Longmeadow
Geneva E. Wolcott	107 Prospect St E. Longmeadow
Albert E. Santucci	49 Taft St. Palmer Mass.
Pauline Santucci	49 Taft St. Palmer Mass
Ernest H. Doten	15 SEYMOUR AVE AGAWAM.
Helen A. Doten	15 Seymour Ave. Agawam

To the Honorable Board of Selectmen of the Town of Holland,
in the County of Hampden and Commonwealth of Massachusetts, and
to all other interested persons and the proper Departments of
the Commonwealth of Massachusetts:

PETITION.

We, the undersigned, Owners of real estate adjoining the Hamilton Reservoir in said Holland, hereby petition the above-named that in the erection of the proposed dam to confine the waters of said Reservoir, due regard may be had to maintain the spillway to the same level as was previously maintained before the flood of 1955, and to make said level such as to accommodate owners of land bordering on said Reservoir, to the extent that bathing beaches and other facilities may be preserved to said owners as formerly maintained before the advent of said flood which caused said dam, or a part thereof to be destroyed.

NAME of OWNER

LEGAL ADDRESS

Freeman Collette
Ida Collette
Violet Rock
James Frame.
Marion R. Frame
Valerie Rock
Mrs Robert A Stone
Robert A Stone
Gordon G. Clow
Lorraine L. Clow

Guy J. L. Day
Charlotte R. Ballard
Earl Murphy
Marion A. Murphy
Samuel Frammore
Rose Frammore
Neil L. Seyton
Jamie Seyton
Ernest J. Collette
Vivian Collette

Mary E. LePage
Ann C. Hemsworth
Susan Hemsworth
Edward Hemsworth
James E. Hemsworth
June Stanley
John A. Stanley Jr.
Mrs. Joel Whitney
Mrs. Leonard Clifford
Joel Whitney
Mr. Leonard W. Clifford
Robert T. Lewis
Mary and T. Klapins
Constance M. Hanna
Sybil J. Brismant
Julian Brismant
Thos O. Ahingena
Myrtle Ahingena
Andrew McLean
Alice McLean
Edward Randean
Robertus Randean
Hazel Andersen
Sigrid Andersen

Wilfred P. Lavoie
Rosa A. Lavoie
Amos Goyer
Margaret W. Goyer
Charles H. Belton
Margaret G. Belton
Dora R. Scapharini
Hedley Scapharini
Leroy W. Ballard
Herbert A. Blancher

Elsie E. Burdick
James D. La Morder
Mary E. La Morder
George H. Brown
Laura M. Brown
Mae E. Campion
Joseph F. Adamowicz
Agnes M. Adamowicz
Mary E. Harrington
George F. Reed Jr.
Marjorie E. Rice
Richard J. Hamblin
Alice E. Hamblin
Mona Sundry
Ellen Jane Purser
Louise M. Peterson
Martin L. Peterson
Harold E. Bradley
Norma L. Bradley
Vivian M. Newton
L. M. Miles
John A. Goodhall
H. M. Nichols
Thelma Cote
Alma Gunning

Springfield, Mass
Springfield, Mass.
Springfield, Mass.
Union Conn
Springfield Mass
Holland
Holland, Mass.
Holland, Mass.
Holland, Mass.
Holland Mass
Holland Mass
Holland, Mass.
Holland, Mass
" "
New York, New York
Holland Mass
Holland Mass
Holland, Mass.
Holland, Mass
East Springfield, Mass.
New Haven Conn
Washapung, Rd. Holland.
Holland.

Carl A. Custola
Paul J. Diliberto
J. Diliberto
Louise Diliberto
Louise Ventola
Ruth Diliberto
Dorothea F. Baker

E. Hartford Conn
Watertown Mass.
Watertown Mass.
Watertown, Mass.
East Htfd, Conn.
Watertown, Mass.
Springfield Mass.

Isobel S. Tabor 24 Independence Ave Lexington ^{Mass} 73
 William Malinovsky Stafford Spring R. 7 D #2
~~Stanley S. Gyll~~ 40 McKinley St Manchester Co
 Charles Kelahan 81 Alexander St E. H. Conn
 Helen Malinovsky R. 7 D #2 Stafford Spring Conn.
 Mary Gyll 40 McKinley St. Manchester, Conn
 Stanley Gyll Jr. 40 McKinley St. Manchester, Conn
 Annette Kelahan 81 Alexander St, East Ht, Conn.
 John H. Fisher 20 Meredith St. Springfield Mass.
 Anita E. Fisher 20 Meredith St. Springfield, Mass

Roland Codere 17 Hamilton St. Southbridge Mass.
 Theresa E. Codere 17 Hamilton St Southbridge, Mass.
 Mary L. Skowya, 32 School St. Palmer, Mass.
 Eleanor Thomas 68 Water St. Palmer, Mass.
 Roger & Juliet 70 Embury Road Spfld.
 Lee Paulet 70 Embury Rd Spring
 Alfred Z Brunelle 56 Aread St Worcester Mass.
 Louise F. Brunelle 56 Aread St - Worcester Mass
 Charles Livors Main St. Fiskdale Mass.
 Matilda Livors Main St. Fiskdale Mass.
 Henry Banas 680 Chapin St Ludlow, Mass.
 Mrs Henry Banas 680 Chapin St. Ludlow Mass.
 George Maudsue 70 Main St Springfield, Mass
 Mrs John Girard 50 Hurycia St Spfld Mass
 John Girard 50 Hurycia St Spfld, Mass
 Chas R Borne 40 Maple Tan Ave Suffield Conn
 Loung J Larson 1070 Plumtree Rd. Spfld. Mass.
 Geneva M Larson 1070 Plumtree Rd. Spfld. Mass.
 Alfonse Dianlanida 38 Lindley St Manchester
 Otto H. ...

Hamilton Reservoir - Holland March 14, 1956

Mr. Stapleton talked with Colonel Boluit of the Cambridge office Corps of Army Engineer, by telephone, regarding this matter and Col Boluit stated that he felt that the repair of the Hamilton Reservoir would not come within the jurisdiction of the Corps of Engineers. He did not feel that the fire protection would be affected and he felt that it was a project for the State to consider.

Holland Dam Inspections - 1956 - 1970



1956 Reports

Inspections by Tighe & Bond.

City/Town	Holland
Dam	Rorabaugh Dams
Dam	Howlett Dam
Dam	Cummings Dams
Dam	Stevens Brook Dam
Dam	Sichol Dam
Dam	Wing Dam
Dam	Holland Rod & Gun Club Dams
Dam	Howelette Dam
Dam	Hamilton Reservoir Dam
Streets	Mashapaug Road
Water	May Brook
Water	Brown's Brook
Water	Hamilton Reservoir
Water	Stevens Brook

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
GEORGE H. McDONNELL
PHILIP W. SHERIDAN
March 9, 1956

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL
C-D Holland

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

On Thursday, March 8th, 1956, the undersigned inspected certain dams in the Town of Holland, and reports as follows:

A. The dams of Rorabaugh.

These dams formerly owned by J. E. Rorabaugh are now the property of the Holland Fish & Game Club, attention Mr. Carl Bopp at Bopp's Landing, Holland, Mass.

The Lower Dam has been drawn down and no water is in storage.

During the flood of August 1955, the dam was overtopped as previously reported. Downstream of the concrete masonry wall, the stone and earth fill was washed out in part in the vicinity of the draw-down pipe. This fill has not been replaced or repaired. Along certain sections of the dam, just downstream of the masonry wall, there is evidence that the fill has settled and been partially washed out also.

The spillway chute, formerly lined with wood, has deteriorated and should be repaired.

A fish screen is in place in the spillway opening and one section of the screen has been opened to allow free flow of water should the pond rise. This fish screen is dirty and shows lack of maintenance.

It is recommended that the fish screen be removed and that the screen be redesigned in such a manner that if it becomes clogged with debris, it will automatically be forced out and opened. The earth and rock fill of the dam washed out by the flood should be replaced. The ponding of water behind this dam should not be permitted until all repairs as recommended are completed and the dam is reinspected.

In regard to the Upper Dam, formerly of Rorabaugh and now of the Holland Fish & Game Club, this dam is in the same condition as the past, and though it is dilapidated it is not in a dangerous condition and the quantity of water stored behind the dam is relatively small.

The Hon. the Board of County Commissioners
Springfield, Mass.

-2-

March 9, 1956

B. Hamilton Reservoir.

This Reservoir is still nearly empty because of the breach around the east of the spillway section washed through in the flood of August. Conditions existing on this date are still approximately the same.

There is a need for the restoration of the pond and the repair of the breach through the dam. This repair should probably be initiated through either the Flood Relief Board or the Army Engineer. The dam is the property of the Ames Worsted Company and thus is a private structure. However, the loss of the pond is an important factor to the Town from the viewpoint of water supply, health and fire protection.

A more detailed report is to be submitted with recommendations regarding the restoration of the structure and probable avenues of approach through the Owner, the Town, the Flood Relief Officials and the Army Engineers.

C. All other dams in the Town of Holland were inspected and the sites of dams breached previous to the flood of August 1955 were also inspected. These dams or sites of old breached dams are as follows:

- (1) Howlett Dam
- (2) Cummings Lower Dam
- (3) Cummings Upper Dam
- (4) Stevens Brook Dam

These four dams have not been in existence as structures impounding water for a number of years. On this date of inspection they were still breached and consequently safe insofar as water ponding is concerned.

D. Sichel Dam.

The Sichel Dam located northerly of Stafford Road near the center of Holland was found to be in satisfactory condition. This is the dam adjacent to the Holland Inn. The dam is small and the quantity of water stored is likewise small. The structure is in good condition and is satisfactory for 1956.

The Hon. the Board of County Commissioners
Springfield, Mass.

-3-

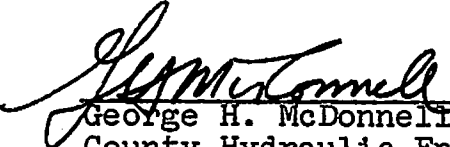
March 9, 1956

E. Wing Dam.

The Wing Dam located on a small tributary to Stevens Brook and on the Town Line between Holland and Wales was found to be in satisfactory condition. This dam is also small and the quantity of water impounded likewise small. The dam was not damaged during the flood of 1955, and on this date of inspection was found to be satisfactory for the year 1956.

Respectfully submitted,

GHM/emm


George H. McDonnell
County Hydraulic Engineer

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS
GEORGE H. McDONNELL
PHILIP W. SHERIDAN
March 9, 1956

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL
C-D Holland

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

On Thursday, March 8, 1956, the undersigned inspected the dams and certain streams in Holland, in the presence of Selectman Attleton, and reports to you as follows:

There are certain brooks in the Town that have been inspected in the past by representatives of the U. S. Army Corps of Engineers, and according to Selectman Attleton, on each of the inspections the person making these inspections verbally stated that the brooks in question should be cleaned and properly aligned, and that action would be forthcoming from the Army Corps of Engineers with flood repair funds.

One of the brooks in question is Stevens Brook. This brook discharges into Hamilton Reservoir near the Northwestern end and flows in a general Easterly direction. Approximately 6,000 feet of the brook apparently should be reviewed and properly cleaned and aligned. There is apparently enough debris in this brook so that extreme high water might move this debris to bridge locations and damage bridges or culvert.

From my field review of the brook, it would seem advisable to make the necessary realignment and to clean debris along the entire length of the brook from Hamilton Reservoir to the Wales Town Line. This would be a length of approximately 12,000 feet. The entire 12,000 feet would not need to be worked over. However, wherever debris occurs or the brook channel has been changed or filled in, the work could and should be accomplished.

On the main road just westerly of Hamilton Reservoir known as Mashapaug Road, the culvert carrying Stevens Brook under the road was damaged and undermined by the flood waters. Some underpinning of the foundation of the abutment and wing walls is desirable and necessary. It is my understanding that a Mr. Proffit from the Worcester Office of the Massachusetts Department of Public Works recommended to the Selectmen that the work be done and that they apply for the work through the Department of Public Works. Selectman Attleton says that they have not been able to have this work accomplished.

The Hon. the Board of County Commissioners
Springfield, Mass.

-2-

March 9, 1956

May Brook, also known as Brown's Brook, rises in Connecticut and flows into the southerly portion of Hamilton Reservoir, just northerly of the Connecticut line in Holland. For a distance of approximately 2,000 feet upstream from its mouth, this brook is choked with debris at various points and thus should additional flood water flow in the brook valley, this debris might be moved downstream to plug culverts and damage roads and bridges. It would seem advisable that this stream also be cleaned. It is my understanding that the representatives from the Corps of Engineers viewed this brook and concurred with the cleaning recommendations.

Selectman Attleton claims that they have requested this work to be done but have not received any assurance that it would be done, and as far as they know, none of the work is scheduled on either the Army Corps of Engineers' projects or the Department of Public Works projects. The Board of Selectmen is requesting whatever assistance the County can give in urging both the Corps of Engineers and the Department of Public Works to take an interest in these projects and to cause them to be undertaken.

An examination of Hamilton Reservoir Dam shows that conditions have not materially altered during the last few months. The breach through the dam to the right of the spillway still exists and a small portion of the pond is retained by the fact that the depth of the breach is not washed to the bottom of the pond. The breach is being retained at its present elevation by boulders and rocks in the bottom of the breach and by the fact that the natural soil of the breach is a clay-like hardpan. The breach does not present a sharp crest or a sharp drop-off, but is more of a broad, shallow type of crest. Consequently, it is agreed that further flooding from Hamilton Reservoir could and undoubtedly will wear down and erode the crest of the breach to a lower level. However, this wearing down should not occur at a rapid rate, but would undoubtedly occur slowly so that the release of waters impounded would not be in a rush nor would the rate probably be too great over and above the normal rate of run-off of storm water at the time of occurrence.

The Hon. the Board of County Commissioners
Springfield, Mass.

-3-

March 9, 1956

There is, however, a serious situation regarding Hamilton Reservoir in that this body of water provides fire protection for the Town of Holland along the main highway, Mashapaug Road, and Sturbridge Road, as well as providing fire protection to all of the homes along the shores of the body of water. With the Reservoir at low level, the shore line has receded so much that it would be almost impossible, if not entirely impossible, to pump water from the Reservoir pond along most of the shore line for fire protection purposes.

The lowering of Hamilton Reservoir has resulted apparently in the lowering of the water table adjacent to the Reservoir, and consequently the shallow dug wells serving many of the homes have, or will, become dry this coming year. Thus, from a health viewpoint, the lower level of the water in Hamilton Reservoir can and is adversely affecting the community.

The Town of Holland normally has a population in the neighborhood of 500 to 600 persons. In the summer time this population increases eight to ten times. With the loss of Hamilton Reservoir, it can be expected that property valuation throughout the entire Town will decline tremendously and that the summer influx of persons will greatly decrease. This condition will affect the economic stability of the entire community and, with the abandonment of real estate due to the lack of a proper level in Hamilton Reservoir, the tax income of the Town can be greatly reduced.

Hamilton Reservoir Dam is owned, according to our records, by the Ames Worsted Company, with main offices in Lowell, Mass. I know that neither the Flood Relief Board of the Commonwealth nor the Corps of Engineers of the U. S. Army can spend funds to replace privately owned dams. However, when the pond formed by the privately owned dam can affect adversely the safety and economy of an entire community I believe that funds can then be expended by either or by both the Army and the Flood Relief Board to restore the property even though it is privately owned. I believe we have other examples in the Commonwealth where similar conditions occurred and public funds were spent, and are being spent, to repair private property for the good of the general public.

The Hon. the Board of County Commissioners
Springfield, Mass.

-4-

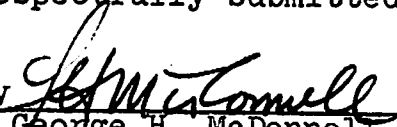
March 9, 1956

I believe the Selectmen and the citizens of Holland are of the opinion that assistance from the County in carrying on negotiations with the Flood Relief Board and the Corps of Engineers of the U. S. Army may result in the repair and replacement of the Hamilton Reservoir Dam with public funds made available for flood repair work, and thus at no cost to the Town of Holland. I believe the Town of Holland would face a difficult financial problem if they are forced to repair the Hamilton Reservoir Dam themselves with their own funds.

Respectfully submitted,

GHM/emm

By


George H. McDonnell
County Hydraulic Engineer

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holland
Aug. 3, 1959

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

Recent inspections of dams within the Town of Holland have completed the inspection routine in Holland and all dams have been examined one or more times since the first of the year. The following report shows the condition of the various dams situated within Holland.

A. Holland Rod & Gun Club Upper Dam (Formerly Rorabaugh)

This structure is still quite dilapidated, as reported in previous years. However, the dam is quite safe. The quantity of water stored is small and the pond shallow. Some grading has been done in the area directly in front of the dam and to the left end of the dam. This work has resulted in thickening the embankment section a bit. It would appear from the grading work that some construction may be planned by the owners just downstream of the dam. It was noted that leakage exists thru the boulders that form a major portion of the dam itself. The water seeping thru is clear and does not constitute any danger to the structure.

B. Holland Rod & Gun Club Lower Dam (Formerly Rorabaugh)

Repairs have been going on at this dam. Washouts in the embankment downstream of the masonry wall of the dam, that were caused by the flood waters of August 1955, have been filled in with earth and gravel. The pond area itself has been worked over with earth moving equipment and it would appear as if a smoothing and cleaning operation has taken place.

At the spillway location, no channel lining has been built across the earth and gravel fill of the dam embankment

from the notch in the concrete upstream wall to the point of discharge of overflow at the downstream face of the embankment. Formerly a wooden spillway chute was used as a spillway channel liner. The drainpipe thru the dam was open and no water was being ponded when last inspected.

The spillway facilities should be properly completed so that overflowing water will not wash away any of the earth, gravel and boulder construction of the embankment. Also, the spillway capacity at this dam should be increased. This could be done by either enlarging the present spillway or by constructing a second spillway in natural ground around the right end of the existing dam.

C. Howelette Dam

No construction has taken place at the site of this old abandoned and destroyed dam. In previous years the undersigned noted certain cleanup and improvement work in the vicinity of the site of this old dam. The site has been checked annually to be certain that a dam is not reconstructed without the owner first filing proper plans and specifications. Based on conditions noted at the time of the last inspection, it would appear as if no dam is being planned for construction at the site of the old Howelette Dam.

D. Hamilton Reservoir Dam

A new spillway has been constructed and the work of building the new gatehouse is now started. The large earth cofferdam is still in place and has stood up well during the winter months and the period of high water flow in the spring. The new spillway is functioning well. Gatehouse construction should be carried on continuously during the remaining weeks of summer and into the fall, so that all work will probably be completed at this dam prior to winter. Conditions at the dam and spillway were found to be satisfactory.

E. Cummings Dams

These are two old, abandoned and breached dams, located on Stevens Brook, just off Stafford Road near Marcey Road. These structures have not ponded water for many years but the site of each of these two dams is inspected annually

to be certain that a free waterway is maintained. When last inspected it was noted that both dams are still breached and a wide free waterway exists.

F. Stevens Brook Dam

Conditions at this dam are the same as reported in previous years. There is a wide breach thru the dam and no pond is being formed. The breach is wide enough to allow for the free flow of the brook during heavy runoff.

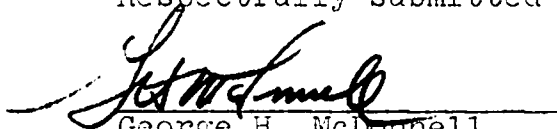
G. Sichol Dam

This small dam, forming a pond immediately adjacent to the highway was found to be satisfactory when last inspected. Though becoming quite dilapidated, the little dam does not cause any threat to persons and property. The dam is too low and only an insignificant quantity of water is stored.

H. Wing Dam

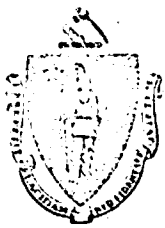
This dam is in the same general condition as reported in previous years. There is so little water stored and the dam is so low in height that it presents no danger to persons or property downstream, despite its dilapidated condition. The earth embankment is well packed and, because of the growth of vegetation, it can act as an overflow during extreme storm conditions without endangering the structure. Conditions at this dam were found to be satisfactory.

Respectfully submitted



George H. McDonnell
County Hydraulic Engineer

GHM/cmb



Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

July 23, 1969

Office of the
County Commissioners
52 State Street

William F. Stapleton
Chairman

Ralph P. Walsh
Floyd W. Fradet

Holland Rod & Gun Club
Holland, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams in Hampden County, you are hereby advised that your two dams, located in the Town of Holland and formerly the property of Rora-baugh, have been inspected by our Engineer and your attention is called to the conditions noted and reported to us by him relative to both the Upper and Lower Dams.

"Upper Dam" This dam is now quite dilapidated. In the third paragraph of the routine inspection report of two years ago it was pointed out that a small rock fill downstream of the spillway wall of the dam and to the left of the spillway proper was settling and failing. In a special report to the Board of County Commissioners dated July 25, 1968 and forwarded to your Club on July 31, 1969 it was again pointed out that the heavy stone fill located just downstream of the dam wall and to the left of the spillway had settled and still had not been repaired to provide support to the stonewall of the dam. It was again recommended to the Owner that corrections and improvements should be made to this fill.

When inspected on Wednesday, July 16, 1969 it was found that this portion of the dam has failed. A section of the wall in front of and to the left of the spillway has collapsed.

The remainder of the dam is quite dilapidated and shows very little signs of structural maintenance ever being done. The concrete cap which extends along the top of the masonry wall of the dam is still broken, sunken and undermined.

Water in storage is quite low. Seepage occurs through the dam embankment thus the pond is draining away.

Old records relative to this dam indicate that it was built in the year 1930. It is formed by an embankment composed of earth and dry stone fill. The dam has a drainage area of less than one half of a square mile. Its height is approximately 7 to 8 feet above the elevation of the stream bed. The old records show that the pond had a capacity of less than a million gallons when built. It formally was used for ice and pleasure purposes.

A quick review of the pond volume on the field by the undersigned indicates that, when filled to overflow capacity the pond probably has a capacity in the range of 900,000 gallons of water.

The provisions of Chapter 253, Sections 44 through 50 apply to dams more than 10 feet in height, or where the quantity of water in poundage exceeds one million gallons or where the area draining into the pond is one square mile or more. The Upper Dam of the Holland Rod & Gun Club does not meet any of these three limits. However, Section 44 of Chapter 253 states that the provisions of the law do not apply to small dams, the breaking of which involve no risk to life or property. Should the Holland Rod & Gun Club Upper Dam break during full pond conditions and at a time when some person may be using the road which passes in front of the dam, there is a good possibility that the person might be injured or killed by the suddenly released water. In other words, because of the location of the dam in relationship to the local access roadway, it is my opinion that should the dam break when it is impounding a full pound of water, it might release the pounded water at a high enough rate to injure or kill a person on the roadway immediately below the dam.

In view of this possibility and the poor condition of the dam, it is recommended that the Owner of the dam be directed to breach the dam by excavating a channel through the embankment in the area of the failure and that this breach be wide enough and deep enough to prevent the forming of a pond at any time and particularly during storm flow periods. The dam is in such poor condition that, at the present time, repair to the structure would, for all practical purposes, necessitate the construction of an entirely new dam and spillway.

Lower Dam This dam is in the same general condition as noted and previously reported. On the day of inspection water level in storage was down about 6" below the crest of the spillway chute. There is no flashboard in the spillway chute. The spillway itself was clear of any debris.

The top surface of the earth portion of this dam should be cleared of all brush and small tree growth. The toe area immediately downstream of the dam is wet. Seepage is occurring through the earth and rock fill of the dam embankment and emerges through the toe. Evidence of seepage can be seen at many small depressed areas in the soil of the pond bottom. These areas are adjacent to the upstream masonry wall of the dam proper. In one instance water could be observed flowing into the cone of the depression and disappearing into and through the fill of the dam embankment.

The downstream wall of the embankment is rough but satisfactory. The seepage which is occurring at this dam is apparently not effecting the safety of the dam in any way. There is no sign of any settlement on the surface of the earth portion of the structure. Thus, it can be assumed that the water seeps through the embankment, it is not washing out any of the soil. The Owner should not put any stoplog in the spillway crest slots. The entire spillway cross section should be available to pass high rates of storm flow."

The recommendations submitted to our Board by the County Hydraulic Engineer relative to the Upper Dam should be complied with prior to the fall rainy weather season. In the area where the dam has failed it would be advisable to excavate a channel through the dam embankment to the full depth of the original brook elevation. The width should be sufficient to provide for free flow of the brook under all conditions of runoff. All debris should be removed from the vicinity of the dam and in front of the culvert under the adjacent roadway.

If it is desired to reactivate this dam at any time in the future, plans and specifications of the proposed structure should be filed for review.

In regard to the Lower Dam, the maintenance recommendations contained in the report of the County Hydraulic Engineer should be followed.

If you desire any further information on this matter, please
do not hesitate to call on us.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holland
July 23, 1970

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Inspections have been made of all dams located in the Town of Holland. Each dam has been inspected at least once during the year 1970. The following report shows the condition of each dam at the time of inspection.

A. Holland Rod & Gun Club - Upper Dam

The embankment is partially breached in the vicinity of the old masonry spillway. The breach is wide enough but it should be deepened by the removal of stones and earth until the breach elevation approaches that of the bottom of the pond.

Stones lying in the stream bed between the dam and the roadway culvert should be removed. If the stones are allowed to remain in their present location they may be washed into the culvert opening and plug the culvert. Should this occur, storm flow runoff could result in a washout of the roadway adjacent to and immediately below the dam.

No water is ponded by the dam at time of normal stream flow. However, in time of high rates of runoff, water is ponded up to the elevation of the bottom of the breach thru the dam embankment. Normally, flow of the brook seeps thru the rock fill of the embankment at a rate approximately equal to the normal stream flow.

The embankment is becoming brush covered and it is apparent that the dam and pond have been abandoned by the Holland Rod & Gun Club.

If the owner will deepen the breach as now existing thru the dam at the location of the old spillway, the quantity of water that can be stored during time of high rates of runoff will be reduced greatly. Also, by lowering the elevation of the breach, the breach itself will become more stable and there will be less chance of boulders being washed downstream towards the roadway culvert.

B. Holland Rod & Gun Club - Lower Dam

This dam receives very little maintenance and, as a result, is becoming dilapidated. Brush and small tree growth occurring on the top of the dam embankment has become so thick, on that portion of the embankment to the right of the spillway, that a proper inspection of the dam could not be made. All brush, weed and small tree growth on the top of the dam embankment and at the toe of the dam must be cut down if the dam is to remain in operation. This type of growth should be cut down annually, its regrowth discouraged and a good growth of turf developed on the top of the dam embankment.

The upstream concrete wall extending the length of the dam needs patching just to the right of the spillway.

Water level in storage on the day of inspection was at the crest of the spillway. There were no stoplogs or flashboards on the spillway crest.

Seepage was observed again under the dam and the rate of seepage is approximately equal to the dry weather rate of stream flow in the brook. The greatest amount of seepage was noted at the toe of the downstream stone masonry wall just to the left of the spillway. Wet areas were observed all along the toe area of the dam. None of these areas indicate a flow of water of sufficient quantity to be dangerous. No soil movement was noted.

The stone wall forming the downstream face of the embankment is rough but satisfactory.

In the opinion of the undersigned, the dam must be given more attention and be maintained in a better manner. It is recommended that the owner be advised to do the maintenance work as outlined in my report.

C. Hamilton Reservoir Dam

The masonry of the right abutment and the right abutment wall was noted to be in satisfactory condition. One construction joint shows a minor amount of movement but this is of no concern whatsoever. Small tree growth is occurring adjacent to the concrete masonry wall on the abutment fill and this growth should be cut down and re-growth discouraged.

The stone filled and paved surface of the right abutment area should be cleared of all brush and small tree growth.

The overflow dam itself was in good condition. Masonry was satisfactory and there was little evidence of any erosion. Water level in storage in Hamilton Reservoir was at the crest of the spillway. There were no flashboards on the crest. Construction joints of the concrete spillway were o.k.

The toe area construction including channels, concrete construction and riprap were all noted to be o.k.

The twin ports at the gatehouse were operating normally. However, water was observed squirting out from under the seat of the drawdown gate. The gate should be re-positioned to eliminate this seat leakage. If allowed to continue week after week and month after month, it is possible that the seat and the gate itself may become eroded to the point where it will not be watertight. Opening the gate an inch or two and then closing it again will probably eliminate the leakage now evident, provided scouring of the seat and the gate has not already occurred.

The crack in the concrete of the gate structure is still the same as previously reported. There is no evidence of further enlargement of the crack. The crack is dry and approximately 3" deep at its deepest point.

The earth embankment at the left side of the gate structure was in good condition. The toe of the embankment was dry and the surface cover of turf was satisfactory.

It is recommended that the owner of the dam, the Town of Holland, do the following maintenance work as soon as possible.

- A. Clear all brush and tree growth from the right abutment area and from the stone paved area to the right of and below the dam.
- B. Re-position the drawdown gate in the gate structure to prevent squirting of water under the gate as now takes place.
- C. Dig out loose masonry in the vertical crack on the outside of the gate structure and repair the crack with proper cement grout.

D. Domaingue Dam

This small structure, constructed for aesthetic purposes and to provide the owner a shallow wading pool, is in satisfactory condition. Though technically the small dam at the outlet end of the wading pool, and the small diversion dam located upstream, could be classified as dams under the provisions of the law because the brook has more than a square mile of drainage area, so little water is stored at shallow depths that loss of one or even both of these two dams would not release enough water downstream to do any damage to persons or property. In fact, an examination of the small pond behind the diversion dam shows that the volume of the pond has been nearly filled completely with soil washed in from upstream.

In the opinion of the undersigned, the two small dams and the related facilities of Mr. Domaingue are satisfactory.

E. Stevens Brook Dam

This old earth and stone dam has been breached for many years and no pond whatsoever is formed. The breach as observed at the time of the inspection this year was found to be very wide and to the full depth of the brook. The old pond area is heavily overgrown with brush and trees. Normally, I would recommend that this old dam site be dropped from the inspection list. However, since it is adjacent to the roadway leading into Holland from Wales and, since the site might be purchased by persons unfamiliar with the requirements for re-activating an old dam, the undersigned will continue to check the site from time to time when routine dam inspections are conducted in the Wales-Holland area.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

Holyoke Water Works Deeds



To whom it may concern,
This is to certify that the city of Holyoke in
the County of Hampden and Commonwealth
of Massachusetts. acting by its Board
of Water Commissioners hereto duly
authorized by Chapter sixty two of the
acts of the Legislature of Massachusetts
passed in the year A.D. 1872. and all
acts in addition to or in amendment
thereof and by the votes of the city
Council of said city passed in
pursuance thereof. for the purpose of
supplying said city and its inhabitants
with pure water. and for the purpose
of raising flowing. holding, diverting
conducting and preserving such water
and conveying the same to any and
all parts of said city. does hereby take
and hold the following lands situated
in said Holyoke and described as follows
to wit:

A certain tract of land situated in said
Holyoke and bounded as follows viz:
Beginning on the west side of the highway
that leads from the house of Austin Goodyear
Northerly to the house of Caleb Hamiston
at the South East corner of the School
House lot. thence running Southerly

by said highway Eight Hundred seventy
one (871) feet to the Northerly side of the
highway that leads from Holyoke to
Westfield. thence Southwesterly by the
last named highway Three Hundred
sixty nine (369) feet. to a stake. thence
Northerly at an angle of $68^{\circ}20'$ with
the last described line four hundred
sixty and one half ($460\frac{1}{2}$) feet. to a stake
thence Northeasterly at an angle of 119°
 $10'$ with the last described line one
Hundred ninety one and one-half
($191\frac{1}{2}$) feet to a stake in a stump, thence
Northerly at an outward angle of
 $135^{\circ}30'$ with the last described line four
hundred seventy and one half ($470\frac{1}{2}$)
feet. thence Easterly in a direct line
Five Hundred sixteen (516) feet to the
point of beginning, containing nine
and one eighth ($9\frac{1}{8}$) acres more or
less. the above tract of land is supposed
to belong to Austin Goodgear
Witness the hands of the said Water
Commissioners this twentieth day of
October A.D. 1881.

James Fallon	} Water Commissioners of Holyoke.
J. A. Sullivan	
Timothy Merritt	

Certificate of Taking
of Lands.

by
City of Holyoke

for
Water Works.

of
Austin Goodgeen.

Received and Filed with
Hampden County Deeds
Nov 16th 1881

Attest James E. Raffall

Register

To Whom It May Concern

This is to certify that the City of Holyoke in the County of Hampden and Commonwealth of Massachusetts acting by its Board of Water Commissioners, hereto duly authorized by Chapter Sixty-Two of the Acts of the Legislature of the Commonwealth of Massachusetts passed in the year A. D. 1872 and by the votes of the City Council of said City passed in pursuance thereof, for the purpose of supplying said City and its inhabitants with pure water, and for the purpose of raising, flowing, holding, diverting conducting, and preserving such water and conveying the same to any and all parts of said City, does hereby take and hold the following lands situated in said City of Holyoke and described as follows to wit:

A certain tract of land situated in said Holyoke, West of the ice house and bounded and described as follows viz: Beginning at a stake in the Westly line of Highway leading from Holyoke to Westfield, said stake being about 625 feet west of a brook running into North side of Wrights Pond, thence North 24° West 128 feet to a stake; thence North $10^{\circ} 45'$ East 178 feet to a stake; thence North 60° West 168 $\frac{1}{2}$ feet to a stake; thence South $40^{\circ} 45'$ West 312 $\frac{1}{2}$ feet to a stake; thence South $35^{\circ} 15'$ West 464 feet to a stake; thence South $22^{\circ} 15'$ East 225 feet to a stake on the Westly line of Highway: thence

Northwesterly on Northwesterly Side of Highway
to point of beginning, containing 5⁸/₁₀₀
acres more or less - said tract of land
being the property of one George Bray.

Also one other tract of land
situated in said Holyoke ^{near the gate house} and described as
follows viz: Beginning at a point on the
Northerly shore of Wrights pond where the shore
line of said Wrights pond intersects the Southerly
line of Highway leading from Holyoke to Westfield
and running thence in an Easterly direction
along the shore line of Wrights pond to a point
in the alleged boundary line between A & L
Goodyear and said Bray: thence Easterly on
said alleged boundary line and across a
road leading from Highway to gate house
of Holyoke Water Works about 72 feet to
an old boundary line: thence North 20° West
about 477 feet to South line of Highway leading
from Holyoke to Westfield: thence Westerly on
Southerly side of Highway and across the
before-mentioned road leading to gate house
to point of beginning containing 4⁸/₁₀₀ acres
more or less - said tract being also the
property of said George Bray.

Also one other parcel of real estate
situated in said Holyoke, being the ice house
lot, so-called and bounded and described
as follows viz: Beginning at a point on
the Northerly shore of Wrights pond where the
shore line of said Wrights pond intersect the
Southerly line of Highway leading from Holyoke

to Westfield thence Southerly on Southerly
line of Highway about 178 feet to a stake; thence
South 7° West 237 feet to a stake; thence South
 30° East 314 feet to a stake; thence South
 $84^{\circ} 30'$ East 311 feet to a stake; thence South
 $45^{\circ} 15'$ East 307 feet to a stake; thence North
 60° East 224 $\frac{1}{2}$ feet to a stake; thence South
 $10^{\circ} 30'$ East about 265 feet to Northerly line
of Highway lying between Wright's and Ashley's
ponds; thence Easterly and on Northerly line
of Highway across the canal leading from
Ashley's pond to Wright's pond to a point
on the boundary line between land of said Bray
and land formerly of H. O. Wolcott and thence in a Northerly
direction and on said boundary line to
Southerly shore of Wright's pond; thence in a
Westerly and Northerly direction along the shore
line of said pond to point of beginning; and
containing $6 \frac{2}{100}$ acres more or less - said
tract being also the property of said George Bray.

Also an other parcel of
real-estate situated in said Holyoke and
bounded and described as follows viz:

Beginning at a stake in the boundary line
between land of ~~Said~~ ^{Charles} Woodworth & J. H. Davis
and running thence Easterly on said boundary
line to West shore of Ashley's pond; thence Northerly
on shore line of said pond to land of H. O.
Wolcott; thence Northerly on boundary between
said Woodworth and H. O. Wolcott to a
point on South line of Highway lying between
Ashley's and Wright's ponds; thence Westerly

about 50 feet on Southerly line of said Highway to a stake; Thence South 44° West 109 feet; Thence South $18^{\circ} 45'$ West 350 feet to a stake; Thence South $36^{\circ} 45'$ West 238 feet to a stake; Thence South $27^{\circ} 15'$ West $419\frac{1}{2}$ feet to point of beginning, containing 12100 acres more or less - and being the property of our Charles Woodworth. -

Also one other Parcel of Real-estate, situated in said Holyoke and bounded and described as follows viz: -
Beginning at a stake in the boundary line between Land of J. W. Davis and Land of Charles Woodworth and running thence South $12^{\circ} 30'$ West $508\frac{1}{2}$ feet to a stake; Thence South $35^{\circ} 45'$ West 230 feet to a stake; Thence South $4^{\circ} 30'$ West 158 feet to a stake; Thence South $54^{\circ} 45'$ West 230 feet to a stake; Thence South $39^{\circ} 30'$ West 164 feet to a stake; Thence South 22° West $132\frac{1}{2}$ feet to a stake; Thence South $10^{\circ} 15'$ East 234 feet to a stake; Thence North 74° West 260 feet to a stake; Thence South $73^{\circ} 40'$ West 241 feet to a stake; Thence South $43^{\circ} 30'$ West 227 feet to a stake; Thence South $21^{\circ} 15'$ West 203 feet to a stake; Thence South $63^{\circ} 45'$ West 597 feet to a stake; Thence South 6° West $329\frac{1}{2}$ feet to a stake; Thence South $7^{\circ} 20'$ East 289 feet to a stake; Thence North $66^{\circ} 15'$ West 386 feet to a stake; Thence South $23^{\circ} 30'$ West $233\frac{1}{2}$ feet to a stake; Thence South $48^{\circ} 45'$ West about 405 feet to North line of Highway leading from Holyoke to Westfield; Thence East along the boundary line to a point where it intersects with the brook flowing from South

End of Ashley's Pond: thence Northeasterly
along said brook and West shore line of
Ashley's Pond to Joint on boundary line
between said Davis and Woodworth: thence
Westerly on this boundary line about 50 feet
to Joint of Beginning: containing 11¹/₂ acres
more or less and being the property of the
said J. W. Davis —

Also one other Parcel of land
situated in said Holyoke and bounded
and described as follows viz: Beginning at
a Joint where the brook flowing from the South
end of Ashley's Pond crosses the Highway and
running thence Southerly and East line of Highway
to a Joint where East line of said Highway
intersects with North line of Highway running
past the "John Ashley" farm so called: thence
Easterly on North line of said Highway to
Easterly end of ^{James Doyle's} ~~James Doyle's~~ land and the
shore line of Ashley's Pond: thence in a Westerly
direction along the shore line of said Pond to
Joint of Beginning: containing 24⁵/₁₀₀ acres
more or less and being the property of said
^{James Doyle} ~~J. W. O'Donnell~~ —

Witness the hands of the said Water
Commissioners this second day of
July A. D. 1877.

James F. Allen
James R. Smith
Jerry A. Sullivan
Water Commissioners

Certificate of Value
of Goods

by

City of Holyoke,

for

Walter Morse.

Received and filed with
Hampden County Deeds

Sept 24th 1877

Attest James O. Russell

Register

Know All Men that
the City of Holyoke, in the County
of Hampden and Commonwealth
of Massachusetts, in the exercise
of powers conferred by Chapter
Four Hundred and Nineteen of
the Acts of the year Eighteen
Hundred and Ninety-Six, being
an act entitled "An Act to
authorize the City of Holyoke to
increase its Water Supply", has
heretofore erected a dam across
the Southwesterly branch of the
Manhan River, in the Northwesterly
part of Southampton, Hampshire
County, Massachusetts, at the
confluence of the Manhan Brook
and Tucker Brook, and on
land late of the estate of
Richard Powers and land late
of Catherine Powers, and has
thereby formed a reservoir
of water, and has constructed
and is constructing an ac-
queduct for the conveying of
water into Ashby's and Wright's
ponds so-called, in said City
of Holyoke.

And in accordance with the act aforesaid the said City of Holyoke by its Water Commissioners has appropriated, taken and held, and does hereby take and hold, for the purpose of supplying the inhabitants of said City with pure water for the extinguishment of fires and for domestic and other purposes, the water from said Southwestern branch of the Manhan River and the waters of Tucker and Manhan brooks and the springs connected therewith and the water rights connected with such waters; and for the purpose aforesaid has taken and purchased lands, rights of way and easements necessary for holding and preserving such water and for diverting and conducting the same into Ashby's and Wright's ponds, aforesaid, and for conducting the same to any and all parts of

said City.

And for the purpose aforesaid the said City of Holyoke, by its Water Commissioners, has taken and appropriated and does hereby take and appropriate the right to lay and maintain water mains and replace the same and keep the same in repair within certain tracts or parcels of land situated in Westfield, Hampden County, Massachusetts and bounded and described as follows:-

Russell
Brothers

One tract situated in said Westfield, supposed to belong to J. Hooker Russell and the heirs or devisees of Isaac Russell, commonly known as land of Russell Brothers, and bounded and described as follows, namely: Beginning at a stake located on the southerly line of land of Daniel Haley and the northerly line of said land of Russell Brothers,

and running thence southeasterly through said land of Russell Brothers in a curve concaved toward the west with a radius of 2836 feet, 398 feet more or less to a stake; thence southeasterly in a line tangent to said curve 222 feet more or less to a stake located on the southerly line of said land of Russell Brothers and the northerly line of land of Edgar Drake; thence easterly along said line 59 feet more or less to a stake located on said line; thence northwesterly through said land of Russell Brothers 265 feet more or less to a stake; thence northwesterly in a curve concaved toward the west with radius of 2876 feet and the last mentioned line as tangent $381\frac{1}{2}$ feet more or less to a stake located on the line first above described; thence westerly along said line

52 feet more or less to place of beginning. Said tract being a strip of land forty (40) feet in width, in which a twenty-inch cast iron water main has been laid, the center of which is sixteen feet from the easterly and twenty-four feet from the westerly line of said tract. Said tract being further described in a map hereunto filed, to which reference is hereby made.

Edgar
Drake

One other tract situated in said Westfield, supposed to belong to Edgar Drake, bounded and described as follows, namely: Beginning at a stake located on the southerly line of the aforesaid land of Russell Brothers and the northerly line of land of said Drake, and running thence southeasterly through said land of said

map herewith filed, to which reference is hereby made.

Watson
Root

One other tract situated in said Westfield, supposed to belong to Watson Root and bounded and described as follows; Beginning at a stake located in the center of the Northwest branch of the Menhant River, the same being the southerly line of land of the aforesaid Edgar Drake and the northerly line of land of said Root, thence running southeasterly through said land of said Root 856 feet more or less (eight hundred fifty-six feet more or less) to a stake located on the southerly line of said land of said Root and the northerly line of land of Eli Cady; thence northeasterly along said line 54 feet more or less to a stake located on said line; thence northeasterly through said land of said Root eight hundred thirty-two (832) feet more or less to a stake located in the center of

the southwest branch of the
Manhan River, on the line first
above described; thence south-
westerly along said line forty-
six (46) feet more or less to the
place of beginning. Said tract
being a strip of land forty
(40) feet in width through
which a twenty inch cast-
iron water main has been
laid, the center of which is
sixteen feet from the easterly
and twenty-four feet from
the westerly line of said tract.
Said tract being further de-
scribed in a map herewith
filed, to which reference is
hereby made.

Watson
Root

One other tract situated in
said Westfield, supposed to belong
to the aforesaid Watson Root, and
bounded and described as follows,
namely: Beginning at a stake
located on the easterly line of
land of Eli Cady and the

westerly line of land of said Root, and running thence southeasterly through land of said Root three hundred-one (301) feet more or less to a stake located on the northerly line of the highway leading from Montgomery to Halyoke; thence easterly along said line of said highway ninety-five (95) feet more or less to a stake; thence northwesterly through said land of said Root four hundred nine (409) feet more or less to a stake located on the line first above described; thence southwesterly along said line forty-four (44) feet more or less to the place of beginning. Said tract being a strip of land forty (40) feet in width, through which a twenty inch cast iron water main has been laid, the center of which is sixteen feet from the easterly end. Twenty-four feet from the westerly line of said tract. Said tract being further described in a map herewith filed, to which reference is hereby made.

Watson
Root

One other tract situated in said Westfield, supposed to belong to the aforesaid Watson Root, and bounded and described as follows, namely: Beginning at a stake located on the easterly line of land of Edgar Allen and the westerly line of land of said Root and the southerly line of the highway leading from Montgomery to Halyoke, and running thence northwesterly along said line of said highway eighty-two and one-half ($82\frac{1}{2}$) feet more or less to a stake located on said line of said highway; thence southeasterly through said land of said Root ninety-two and one-half ($92\frac{1}{2}$) feet more or less to a stake located on the westerly line of said land of said Root and the northerly line of land of Edgar Allen; thence northwesterly along said line to the place

of beginning. Said tract being a strip of land forty (40) feet in width, through which a twenty inch cast iron water main has been laid, the center of which is sixteen feet from the easterly line and twenty-four feet from the westerly line of said tract. Said tract being further described in a map hereunto filed, to which reference is hereby made.

Eli
Cady

One other tract situated in said Westfield, supposed to belong to Eli Cady, and bounded and described as follows, namely: Beginning at a stake located on the easterly line of land of Watson Root and westerly line of land of said Cady, and running thence southeasterly through said land of said Cady six hundred twenty-nine (629) feet more or less to a stake; thence southeasterly in a curve concaved toward the west the radius of which is seventeen

hundred ten feet and with last mentioned line as tangent three hundred two (302) feet more or less to a stake; thence southeasterly in a line tangent to said curve two hundred twelve and one half ($212\frac{1}{2}$) feet more or less to a stake; thence southeasterly in a curve concave toward the west with a radius of fifteen hundred eighteen feet and the last described line as tangent three hundred sixty-one (361) feet more or less to a stake; thence southeasterly in a line tangent to said curve one hundred thirty-two (132) feet more or less to a stake located on the easterly line of said land of said body and the westerly line of land of Watson Root; thence northwesterly along said line forty-four (44) feet more or less to a stake; thence northwesterly through said land of said body one hundred fourteen (114) feet more or less to a stake; thence northwesterly in a curve concave toward the west with a radius of fifteen hundred fifty-eight feet and the last mentioned line as tangent three hundred seventy (370) feet more or less to a stake; thence north-

westerly in a line tangent to said curve two hundred twelve and one-half ($212\frac{1}{2}$) feet to a stake; thence northwesterly in a curve convex toward the west with a radius of sixteen hundred seventy feet and last mentioned line as tangent two hundred ninety-five (295) feet more or less to a stake; thence northwesterly in a line tangent to said curve six hundred sixty-nine (669) feet more or less to a stake located on the line first above described; thence southerly along said line fifty-four (54) feet more or less to the place of beginning. Said tract being a strip of land forty (40) feet in width, in which a twenty-inch cast iron water main has been laid, the center of which is sixteen feet from the easterly line and twenty-four feet from the westerly line of said tract. Said tract being further described in a map herewith filed, to which reference is hereby made.

Edgar
Allen

One other tract situated in said Westfield, supposed to belong to

Edgar Allen, and bounded and described as follows, namely: Beginning at a stake on the easterly line of land of Watson Root and the westerly line of land of said Allen and on the southerly line of the highway leading from Montgomery to Holyoke, and thence running southwesterly along said line thirty-seven (37) feet more or less to a stake; thence southeasterly through said land of said Allen three hundred seventy-eight (378) feet more or less to a stake; thence southeasterly in a curve convexed toward the west the radius of which is four thousand eighteen feet and with last mentioned line as tangent 99 feet more or less to a stake located on the easterly line of said land of said Allen and the westerly line of the highway leading from East Farnas to Westfield; thence northerly along said line of said highway fifty-six (56) feet more or less to a stake; thence northerly in a line tangent to the curve last above mentioned three hundred eighty-two (382) feet more or less to a stake located on the southerly line of the highway last above mentioned; thence northwesterly along

said line of said highway fifteen (15) feet more or less to the place of beginning. Said tract being a strip of land forty (40) feet in width, through which a twenty inch cast iron water main has been laid, the center of which is sixteen feet from the easterly and twenty-four feet from the westerly line of said tract. Said tract being further described in a map herewith filed to which reference is hereby made.

Westfield
Brick Co.

One other tract situated in said Westfield, supposed to belong to the Westfield Brick Company, and bounded and described as follows, namely:— Beginning at a stake located on the easterly line of the highway leading from Westfield to East Farms and the westerly line of land of said Westfield Brick Company, and running thence southeasterly through said land of said Brick Company, in a curve convex toward the west with a radius of four thousand eighteen feet two hundred thirty-seven (237) feet more or less to a stake; thence southeasterly

in a line tangent to said curve two thousand two hundred fifty-two (2252) feet more or less to a stake located on the easterly line of said land of said Brick Company and the westerly line of the Northampton branch of the New York, New Haven and Hartford Railroad Company; thence northerly along said line last described eighty-two (82) feet more or less to a stake; thence northwesterly through said land of said Brick Company twenty-one hundred eighty (2180) feet more or less to a stake; thence northwesterly in a curve convex toward the west with a radius of thirty-nine hundred seventy-eight feet and the last described line as tangent one hundred seventy (170) feet more or less to a stake; thence westerly and at right angles with the last mentioned line six (6) feet to a stake; thence northwesterly and approximately at right angles with the last mentioned line one hundred (100) feet more or less to a stake located on the line first above described; thence southerly along said line forty-eight (48) feet more or less

to the place of beginning. Said tract, with the exception of the first one hundred (100) feet in length adjoining the highway leading from Westfield to East Farns, being a strip of land forty (40) feet in width through which a twenty-inch cast iron water main has been laid, the center of which is sixteen feet from the easterly line and twenty-four feet from the westerly line of said tract. Said tract being further described in a map herewith filed, to which reference is hereby made.

Said City of Holyoke by its Water Commissioners, Martin P. Conway, Charles D. Colson and John J. Sullivan, has taken and shall forever have the right to enter upon the tracts of land above described for the purpose of laying, maintaining, replacing and repairing water mains and examining the condition thereof.

In Witness Whereof, we

the said Martin P. Conway, Charles D.
Golson and John J. Sullivan, have
hereunto set our hands this eleventh
day of October in the year of our
lord One thousand eight hundred and
ninety-seven.

Martin P. Conway

Chas. D. Golson

John J. Sullivan

HAMPDEN COUNTY REGISTRY OF DEEDS.

OCT 18 1897

Received 9 M 58 M a.m.

Recorded in Book 567
Page 374

Witness
Miss O. M. Allen
Registrar

Hampden

Know all Men that the City of Holyoke, in the County of Hampden and Commonwealth of Massachusetts, in the exercise of powers conferred by chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-six, and of chapter four hundred and eighty-two of the acts of the year eighteen hundred and ninety-eight, has heretofore erected a dam across the southwesterly branch of the Manhan river, in Southampton, Hampshire County, Massachusetts, and has thereby formed a reservoir of water, and has constructed an aqueduct for the conveying of water into Ashley's and Wright's ponds, so-called, in said City of Holyoke. And for the purpose of constructing and maintaining said aqueduct, and for any other purposes authorized by the acts above referred to, said City of Holyoke, by its Water Commissioners, has taken and appropriated, and does hereby take and appropriate, the right to lay and maintain water mains and replace the same and keep the same in repair partly in said City of Holyoke, and partly through a certain tract of land situated in West Springfield in said County of Hampden, supposed to belong to BELLE PESOE alias BELLE FREDENBURG, bounded and described as follows, namely:- Beginning at a stake situated in said Holyoke, on the westerly side of the highway leading from Holyoke to Westfield, and twenty-one (21) feet southerly from the southeasterly corner of the west abutment of the Holyoke & Westfield R. R. bridge over said highway, and running thence southerly along the westerly side of said highway one hundred twenty-eight (128) feet to a stone monument situated over the center of twenty inch pipe. Thence southerly along the westerly side of aforesaid highway two hundred twenty-six and one-half ($226\frac{1}{2}$) feet to a stake; thence southwesterly through land of said Belle Fredenburg one hundred sixty-six (166) feet to a stake; thence in a curve deflecting to the left, tangent to last-mentioned line and with a radius of 2066 feet, two hundred ninety-nine (299) feet to the westerly side of the aforesaid highway. Thence along said highway southerly two hundred seventy-three (273) feet to the line between West Springfield and Holyoke; thence southerly along said highway in the same

line twenty-five (25) feet to a stone monument. Thence north-westerly twenty-five (25) feet to the said line between Holyoke and West Springfield. Thence in the same line in said Holyoke one hundred sixty-four (164) feet to a stake. Thence in a curve tangent to last mentioned line and deflecting to the right with a radius of (3106) feet three hundred ninety-eight and one-half (398 1/2) feet to a stake. Thence in a straight line tangent to last described curve one hundred ninety-four (194) feet to a stake. Thence in a curve tangent to last mentioned line with ~~be~~ a radius of 2081 feet and deflecting to the left one hundred ninety-seven (197) feet to a stake. Thence in a straight line tangent to last described curve one hundred twenty-seven and one-half (127 1/2) feet to the place of beginning. Said tract being a strip of land forty (40) feet in width, the westerly boundary being sixteen feet and the easterly boundary twenty-four feet from the central axis of a twenty-inch water main now laid by said City of Holyoke.

Said City shall forever have the right to enter upon the land above described for the purpose of laying, maintaining, replacing and repairing water mains.

In witness whereof, we, Charles D. Colson, John J. Sullivan and Thomas F. Greaney, Water Commissioners of said City of Holyoke, have hereto set our hands this twenty-eighth day of October in the year of our Lord one thousand eight hundred and ninety-eight.

Charles D. Colson
Thomas F. Greaney
John J. Sullivan

887-1

Belle Fredenburg
Almas,
to

City of Holyoke

HAMPDEN COUNTY REGISTRY OF DEEDS.

NOV 16 1898

Received 2 H. 43 M. P. M.

Recorded in Book 593 Page 46.

Attest: *Miss R. Wells*

Register

KNOW ALL MEN that the City of Holyoke, in the County of Hampden and Commonwealth of Massachusetts, in the exercise of powers conferred by Chapter four hundred and nineteen of the Acts of the year Eighteen hundred and ninety-six, being an act entitled "An Act to authorize the City of Holyoke to increase its Water Supply," has by its Water Commissioners, for the purpose of supplying the inhabitants of said city with pure water for the extinguishment of fires and for domestic and other purposes, taken the right to lay and maintain water mains and replace the same and keep the same in repair, within certain tracts or parcels of land situated, bounded and described as follows:-

One tract situated in Westfield in said Hampden County, and supposed to belong to the devisees of James Guilshan, late of said Westfield, and bounded and described as follows, namely:- Beginning at a stake located on the south-easterly line of land supposed to belong to William Sibley, George F. Sibley and Seymour Sibley and the north-westerly line of land supposed to belong to the said devisees of James Guilshan and running thence south-easterly through said land of said devisees four hundred thirty-five (435) feet, more or less to a stake located on the southerly line of said land of said devisees and the northerly line of other land of the aforesaid Sibleys; thence easterly sixty (60) feet, more or less to a stake located on the last mentioned line; thence north-westerly through said land of said devisees five hundred (500) feet, more or less, to the line first above described; thence south-westerly forty-four and one-half ($44\frac{1}{2}$) feet, more or less, to the place of beginning. Being a strip of land forty (40) feet in width, in which a twenty-inch cast-iron water main has been laid, the center of

which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, and supposed to belong to the said devisees of James Guilshan, and bounded and described as follows, namely:- Beginning at a stake located on the southerly side of the highway leading from Westfield to Holyoke, and running thence easterly through land of the said devisees seventeen hundred and twenty-six (1726) feet, more or less, to a stake located at a point tangent to a curve convexed toward the south, the radius of which is eleven hundred seventy (1170) feet; thence running easterly through said land of said devisees in said curve, for a distance of one hundred eighty-one (181) feet, more or less, to a point on the northerly side of the Holyoke and Westfield Railroad boundary line; thence beginning on the southerly side of the boundary line of said railroad and running easterly in the aforesaid curve four hundred seventy-seven (477) feet, more or less, to a stake located on the line between the towns of Westfield and West Springfield; thence northerly along the last mentioned line forty-nine (49) feet, more or less, to a stake located on said line; thence westerly through said land of the said devisees in a curve convexed toward the south, the radius of which is eleven hundred thirty (1130) feet, for a distance of three hundred thirty-four (334) feet, more or less, to a point on the southerly side of the aforesaid railroad; thence beginning at a point on the northerly boundary line of said railroad and running in the same curve, through said land of said devisees, three hundred fourteen (314) feet, more or less, to a stake located at a point tangent to said curve; thence westerly through said land of said devisees sixteen hundred

fifty-eight (1658) feet, more or less, to a stake located on said southerly line of said highway leading from Holyoke to Westfield; thence westerly along said line of said highway eighty-seven (87) feet, more or less, to the place of beginning. Being strip of land forty (40) feet in width, in which a twenty-inch cast-iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, supposed to belong to W. R. Pendleton of said Westfield, and bounded and described as follows, namely:- Beginning at a stake located on the south-easterly line of land of William Sibley, George F. Sibley and Seymour Sibley and the north-westerly line of land of said W. R. Pendleton, and running thence south-easterly through ^{said} land of said Pendleton nineteen hundred eighteen (1918) feet, more or less, to a stake located on the northerly line of land supposed to be of Catherine Stanton *or* J. H. Murray, now occupied by George Holden, and the southerly line of said land of the said Pendleton; thence easterly seventy-two and one-half ($72\frac{1}{2}$) feet, more or less, to a stake located on the last mentioned line; thence north-westerly through the said land of the said Pendleton two thousand and two (2002) feet, more or less, to a stake located on the line first above described; thence south-westerly forty-nine and one-half ($49\frac{1}{2}$) feet, more or less, to the place of beginning. Being a strip of land forty (40) feet in width in which a twenty-inch cast-iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, supposed to belong to said W. R. Pendleton, and bounded and described as follows, namely:- Beginning at a stake located on the easterly line of the highway leading from Westfield to Northampton and running thence easterly through land of said Pendleton in a curve convexed toward the south-west with a radius of fourteen hundred forty-four (1444) feet, for a distance of nine hundred forty (940) feet, more or less, to a stake located on the northerly line of the highway leading from Westfield to Holyoke; thence easterly along said highway eighty-seven (87) feet, more or less, to a stake located on said line of said highway; thence westerly through said land of said Pendleton in a curve convexed toward the south-west with a radius of fourteen hundred four (1404) feet for a distance of ten hundred fifty-five (1055) feet, more or less, to a stake located on the line first above described; thence southerly along said line sixty-six and one-half ($66\frac{1}{2}$) feet, more or less, to the place of beginning. Being a strip of land forty (40) feet in width, in which a twenty-inch cast-iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, supposed to belong to William Sibley, George F. Sibley and Seymour Sibley, and bounded and described as follows, namely:- Beginning at a stake located on the northerly line of land of said Sibleys and the southerly line of land of the devisees of James Guilshan, and running thence south-easterly through said land of said Sibleys thirteen hundred twenty-nine (1329) feet, more or less, to a stake located on the south-easterly line of said land of said Sibleys and the north-westerly line of land of W. R. Pendleton; thence northeasterly forty-nine

and one-half ($49\frac{1}{2}$) feet, more or less, to a stake located on the last mentioned line; thence north-westerly through said land of said Sibleys twelve hundred fifty-four (1254) feet, more or less, to a stake located on the line first above described; thence westerly sixty (60) feet, more or less, to the place of beginning. Being a strip of land forty (40) feet in width, in which a twenty-inch cast iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, supposed to belong to William Sibley, George F. Sibley and Seymour Sibley, aforesaid, and bounded and described as follows, namely:- Beginning at a stake located in the center of the brook which is the overflow of Hampton ponds, and known as Hampton pond brook, on the north-westerly line of land of Elisha Avery and south-easterly line of land of said Sibleys and running thence south-easterly six hundred fifty-four (654) feet, more or less, through said land of said Sibleys to a stake located on the south-easterly line of said land of said Sibleys and the north-westerly line of land of the devisees of James Guilshan; thence north-easterly forty-four and one-half ($44\frac{1}{2}$) feet, more or less, to a stake located on the last mentioned line; thence north-westerly through said land of said Sibleys six hundred thirty-four (634) feet, more or less, to a stake located in Hampton pond brook on the line first above mentioned; thence westerly forty-three (43) feet, more or less, to place of beginning. Being a strip of land forty (40) feet in width in which a twenty-inch cast-iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

One other tract situated in said Westfield, supposed to belong to Catherine Stanton or J. H. Murray, now occupied by George Holden, and bounded and described as follows, namely:- Beginning at a stake located on the southerly line of land of W. R. Pendleton and the northerly line of said land of said Stanton or Murray and running thence southeasterly through said land of Stanton or Murray one hundred forty-four (144) feet, more or less, to a stake located on the westerly line of the highway leading from Westfield to Rock Valley and Northampton, and the easterly line of said land of said Stanton or Murray; thence northerly sixty-six and one-half ($66\frac{1}{2}$) feet, more or less, to a stake located on last mentioned line; thence north-westerly through said land of said Stanton or Murray thirty-two and one-half ($32\frac{1}{2}$) feet, more or less, to a stake located on the line first above described; thence westerly seventy-two and one-half ($72\frac{1}{2}$) feet, more or less, to place of beginning. Being a strip of land forty (40) feet in width in which a twenty-inch cast-iron water main has been laid, the center of which is sixteen (16) feet from the easterly line and twenty-four (24) feet from the westerly line of said forty-foot strip.

X Said City of Holyoke, by its Water Commissioners, Martin P. Conway, Charles D. Colson and John J. Sullivan, for the purpose aforesaid, has taken and shall forever have the right to enter upon the tracts or parcels of land above described for the purpose of laying, maintaining, replacing and repairing water mains, and examining the condition thereof.

IN WITNESS WHEREOF we, the said Martin P. Conway,
Charles D. Colson and John J. Sullivan, have hereunto set our
hands this ninth day of August in the year of our Lord One
thousand eight hundred and ninety-seven.

Martin P. Conway

Chas. D. Colson

John J. Sullivan

In presence of

J. W. Caney.

James Guilshan
T.

City of Holyoke

Rec'd Filed with
Hampden County Clerk
Aug 11. 1897.

Attest James R. Wells
Register

Recorded in Book 569 Page 182

Attest James R. Wells
Register

KNOW ALL MEN that the City of Holyoke, in the County of Hampden and Commonwealth of Massachusetts, in the exercise of powers conferred by chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-six, being an act entitled "An Act to authorize the City of Holyoke to increase its Water Supply", has heretofore erected a dam across the southwesterly branch of the Manhan river, in the northwesterly part of Southampton, Hampshire County, Massachusetts, at the confluence of the Manhan brook and Tucker brook, and on land late of the estate of Richard Powers and land late of Catherine Powers; and has thereby formed a reservoir of water, and has constructed and is constructing an aqueduct for the conveying of water into Ashley's and Wright's ponds, so-called, in said City of Holyoke .

And in accordance with the act aforesaid, for the purpose of supplying the inhabitants of said City with pure water for the extinguishment of fires and for domestic and other purposes, said City of Holyoke, by its Water Commissioners, has taken and appropriated, and does hereby take and appropriate, the right to lay and maintain water mains and replace the same and keep the same in repair, within certain tracts or parcels of land situated in West Springfield in said Hampden County, bounded and described as follows:

One tract supposed to belong to M. L. TOURTELLOTTE, or to Tourtellotte, Chapman and Parker, bounded and described as follows, namely:- Beginning at a stake on ~~the~~ ^{or of Tourtellotte, Chapman and Parker} of the devisees of James Guilshan the northerly boundary line of land of ~~P. A. Guilshan~~ and the south-erly line of ^{said} land of M. L. Tourtellotte, which line is also a part of the dividing line between West Springfield and Westfield, and running thence northerly through said land ^{or of Tourtellotte, Chapman and Parker} of said Tourtellotte in a curve with a radius of eleven hundred seventy feet, convexed toward the east, three hundred ninety-eight and seven-tenths [398.7] feet more or less to a stake; thence northerly in a line tangent to said curve five hundred seventy-eight [578] feet more or less to a stake; thence northerly in a curve having the last mentioned line

2

as tangent, with a radius of sixteen hundred eleven feet and convexed toward the west, fifty-one [51] feet more or less to a stake located on the northerly line of said land of said Tourtellotte ^{or of Tourtellotte, Chapman and Parker} and the southerly line of land of Oscar Ely; thence westerly along said line between said Tourtellotte ^{or of Tourtellotte, Chapman and Parker} and said Ely forty and three-tenths [40.3] feet more or less to a stake; thence southerly through said land of said Tourtellotte ^{or of Tourtellotte, Chapman and Parker} in a curve with a radius of sixteen hundred fifty-one feet and convexed toward the west, fifty-six and two-tenths [56.2] feet to a stake; thence southerly in a line tangent to said curve five hundred seventy-eight [578] feet more or less to a stake; thence southerly in a curve with the last mentioned line as tangent, having a radius of eleven hundred thirty feet and convexed toward the east, three hundred sixty-five [365] feet more or less to a stake located on the aforesaid line between Guilshan ^{devisees} and Tourtellotte ^{or Tourtellotte, Chapman and Parker} thence easterly along said line forty-five and seven-tenths [45.7] feet more or less to the place of beginning. Said tract being further described in a map herewith filed, which is hereby referred to and made a part of this description.

One other tract situated in said West Springfield, ~~or to~~ Catherine Scully, supposed to belong to ~~PATRICK SCULLY~~ ^{devisees} bounded and described as follows, namely:- Beginning at a stake located on the southerly line of land of Andrew Dibble and the northerly line of ^{said} land of ~~Patrick~~ ^{said} Scully, and running thence southerly through said land of said Scully thirty-three hundred and sixty-eight [3368] feet more or less to a stake located on the southerly line of said land of said Scully and the northerly line of ~~or~~ the devisees of James Guilshan; thence westerly along said line between said Scully and said Guilshan ^{devisees} forty and eighty-five hundredths [40.85] feet to a stake; thence northerly through said land of said Scully thirty-three hundred and seventy-seven [3377] feet more or less to a stake on the line first above described; thence easterly along

5
said line forty-three and sixty-two hundredths [43.62] feet more or less to the place of beginning. Said tract being further described in a map herewith filed, which is hereby referred to and made a part of this description.

One other tract situated in said West Springfield, ~~to~~ to the devisees of James Guilshan supposed to belong ~~to P. A. GUILSHAN,~~ [^] bounded and described as follows, namely: - Beginning at a stake located on the southerly line of land ~~of Catherine Scully~~ ^{said} and the northerly line of land of ~~P. A. Guilshan,~~ ^{said Guilshan's devisees} and running thence southerly through said land of said Guilshan's ^{devisees} four hundred thirty-two [432] feet more or less to a stake; thence southerly in a curve having the last described line as tangent and with a radius of fourteen hundred forty-six feet, convexed toward the east, six hundred ninety-six [696] feet more or less to a stake; thence southerly in a line tangent to said curve thirty-seven [37] feet more or less to a stake located on the northerly line of the highway leading from Holyoke to Westfield; thence westerly along said line of said highway forty-four and five tenths [44.5] feet more or less to a stake; thence northerly through said land of said Guilshan's ^{devisees} fifty-six [56] feet more or less to a stake; thence northerly in a curve with a radius of fourteen hundred six feet, convexed toward the east and with the last described line as tangent, six hundred seventy-seven [677] feet more or less to a stake; thence northerly in a line tangent to said curve four hundred forty [440] feet more or less to a stake located on the aforesaid line between Scully and Guilshan's ^{devisees}; thence easterly along said line forty and eighty-five hundredths [40.85] feet more or less to the place of beginning. Said tract being further described in a map herewith filed, which is hereby referred to and made a part of this description.

4

One other tract situated in said West Springfield, supposed to belong to OSCAR ELY, bounded and described as follows, namely:- Beginning at a stake on the southerly line of land of Albert Tatro and the northerly line of land of Oscar Ely, and running thence southerly through said land of said Ely nine hundred seventy-nine [979] feet more or less to a stake; thence southerly in a curve with a radius of *1611 feet* and convexed toward the *west* one hundred forty-four and seven-tenths [144.7] feet more or less to a stake on the southerly line of land of Oscar Ely and the northerly line of land of M. L. ^{or of Tourtellotte, Chapman and Parker;} Tourtellotte, thence ^{or Tourtellotte, Chapman and Parker} westerly along said line between Ely and Tourtellotte [^] forty and three-tenths [40.3] feet more or less to a stake; thence northerly through said land of said Ely in a curve with a radius of *1651* feet and convexed toward the west, one hundred forty-five [145] feet more or less to a stake; thence northerly in a line tangent to said curve nine hundred seventy-nine [979] feet more or less to a stake located on the line first above described; thence easterly along said line forty [40] feet more or less to the place of beginning. Said tract being further described in a map herewith filed, which is hereby referred to and made a part of this description.

Said City of Holyoke, by its Water Commissioners, Martin P. Conway, Charles D. Colson and John J. Sullivan, has taken and appropriated and shall forever have the right to enter upon the

tracts of land above described for the purpose of laying, maintaining, replacing and repairing water mains and examining the condition thereof.

IN WITNESS WHEREOF, we, the said Martin P. Conway, Charles D. Colson and John J. Sullivan, hereto set our hands this twenty-seventh day of December in the year of our Lord one thousand eight hundred and ninety-seven.

Martin P. Conway
Chas. D. Colson
John J. Sullivan

WATER COMMISSIONERS OF THE CITY
OF HOLYOKE.

*Recd Jan. 7. 1898 and Recorded in County
den County Registry of Deeds Book 547*

Page 3.

Attest James R. Wells Register

M. R. Journaliste de

To 193

City of Holyoke

ANDREW C. J. JOURNALIST OF HOLYoke

JAN 7 1898

Received 9 H. 45 M. A.M.

KNOW ALL MEN that the City of Holyoke, in the County of Hampden and Commonwealth of Massachusetts, in the exercise of powers conferred by Chapter 419 of the Acts of the year 1898, being an act entitled "An Act to authorize the City of Holyoke to increase its Water Supply", and of powers conferred by Chapter 482 of the Acts of the year 1898, has heretofore erected a dam across the southwesterly branch of the Manhan River, in the northwesterly part of southampton, Hampshire County, Massachusetts, at the confluence of the Manhan brook and Tucker brook, and on land late of the estate of Richard Powers and land late of Catherine Powers, and has thereby formed a reservoir of water, and has constructed an aqueduct for the conveying of water into Ashley's and Wright's ponds, so-called, in said City of Holyoke.

And in accordance with said Acts, and for the purposes aforesaid, the said City, by its Water Commissioners, has taken and appropriated, and does hereby take and appropriate, the right to lay and maintain water mains and replace the same and keep the same in repair, within certain strips of land forty [40] feet wide, lying in Westfield and West Springfield, in said County of Hampden, said strips of land being further described in certain maps herewith filed, and being further ~~the~~ bounded and described as follows:-

A certain strip situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the northerly line of the highway leading from Montgomery to Hampton Ponds, on land of Watson Root, and sixteen [16] feet easterly of the center of a twenty-inch cast iron water main laid by said City of Holyoke from the aforesaid reservoir to Ashley's and Wright's ponds, aforesaid, and running thence southeasterly, sixteen [16] feet from and parallel with said water main, across the said highway, one hundred six [106] feet to the southerly line of said highway and to land of Edgar Allyn; thence westerly along the southerly line of said high-

Watson Root
and
Edgar Allyn
to
City of
Holyoke

2

way, and along land of said Allyn and land of said Root ninety [90] feet to a point twenty-four feet west of the center of said water main; thence northwesterly across said highway twenty-four [24] feet from and parallel with the center of said water main, one hundred six [106] feet to the northerly line of said highway and to land of said root; thence easterly along said highway and along land of said root ninety [90] feet to the place of beginning.

Westfield
Brick
Company
to
City of
Holyoke

A certain strip situated in said Westfield, bounded and described as follows, namely: -Beginning at a point on the westerly line of the highway leading from Westfield to southampton, on land of Edgar Allyn, sixteen [16] feet easterly of the center of the aforesaid water main, and running thence across said highway, in a line sixteen [16] feet from and parallel with said water main sixty-seven [67] feet to a point on the easterly line of said highway and to land of the Westfield Brick Company; thence southerly along said easterly line of said highway fifty-seven [57] feet to a point twenty-four [24] feet from said water main; thence northwesterly, twenty-four [24] feet from and parallel with said water main sixty-seven [67] feet to the westerly line of said highway and to land of said Allyn; thence northerly along the westerly line of said highway and along land of said Allyn fifty-seven [57] feet to the place of beginning.

New Haven
and
Northampton
Railroad
Company
to
City of
Holyoke

A certain strip situated in said Westfield, bounded and described as follows, namely: - Beginning at a point on the line between land of the Westfield Brick Company and the location of the New Haven and Northampton Railroad, said point being sixteen [16] feet easterly, measured at right angles, from the center of the aforesaid water main, and running thence southerly along the westerly line of said location and the easterly line of land of said Brick company eighty-five [85] feet to a point twenty-four [24] feet westerly of the center of said water main, measured at right an-

3
gles; thence southeasterly twenty-four feet from and parallel with the center of said water main, and forming a deflection angle to the left of twenty-nine degrees with the last mentioned line one hundred thirty-two [132] feet to the easterly line of said location and to land of ~~one~~ Coleman; thence northerly along the easterly line of said location and along land of said Coleman eighty-five [85] feet to a point sixteen [16] feet easterly of the center of said water main; thence northwesterly, sixteen feet from and parallel with the center of said water main one hundred thirty-two [132] feet to the place of beginning.

situated in said Westfield

A certain strip [^] bounded and described as follows,

Morton Sperry
John Curran
and
E. S. Bennett
to
City of Holyoke
namely: Beginning at a point on the northerly line of the highway leading from Middle Farms to East Farms, on the southerly line of land of *Morton* Sperry, and sixteen feet easterly from the center of the aforesaid water main, and running thence southeasterly across said highway, also across another highway known as the Timber Swamp road, sixteen feet from and parallel with the center of said water main, ninety-five (95) feet to the last named highway and to land of *John* Curran; thence southerly along the last named highway and land of said Curran sixty (60) feet to a point twenty-four feet westerly from the center of said water main; thence northwesterly across said Timber Swamp road in a line twenty-four feet from and parallel with the center of said water main forty (40) feet to the westerly line of the highway leading to Westfield and to land of *E. S.* Bennett; thence northerly along the westerly line of said Timber Swamp road and along land of said Bennett thirty-two (32) feet to a road leading from East Farms to Middle Farms; thence westerly along the southerly line of the last named highway and along land of said Bennett forty (40) feet to a point twenty-four feet westerly from the center of said water main; thence northwesterly twenty-four feet from and parallel

with the center of said water main ninety-five (95) feet to the northerly line of said highway and to land of said Sperry; thence easterly along said highway and land of said Sperry sixty-eight (68) feet to the place of beginning.

A certain tract situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway leading from East Farms to Westfield and on the easterly line of land of the aforesaid Bennett, said point being sixteen feet easterly of the center of the aforesaid water main and running thence across said highway in a line sixteen feet from and parallel with the center of said water main eighty-nine (89) feet to the easterly line of said highway and to land of Isaac Allen; thence southerly along the easterly line of said highway and along land of said Allen sixty-five (65) feet to a point twenty-four feet westerly of the center of said water main; thence northerly easterly across said highway in a line twenty-four feet from and parallel with the center of said water main eighty-nine (89) feet to the westerly line of said highway and the easterly line of land of said Bennett; thence along said westerly line of said highway and the easterly line of land of said Bennett sixty-five (65) feet to the place of beginning.

A certain tract situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway leading from Westfield to Hampton Ponds, and on the line of land of Isaac Allen, said point being sixteen feet easterly from the center of the aforesaid water main, and running thence southeasterly across said highway in a line sixteen feet from and parallel with the center of said water main eighty-two (82) feet to the easterly line of said

Isaac
Allen
To
City of
Holyoke

highway and to land of said Allen; thence southerly along the easterly line of said highway and along land of said Allen seventy-five (75) feet to a point twenty-four feet westerly of the center of said water main; thence northwesterly across said highway in a line twenty-four feet from and parallel with the center of said water main eighty-two (82) feet to the westerly line of said highway and to land of said Allen; thence northerly along the westerly line of said highway and along land of said Allen seventy-five (75) feet to the place of beginning.

A certain strip situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway known as the Owen district road, and on land of *Elisha* Avery, said point being sixteen feet easterly of the center of the aforesaid water main, and running thence southeasterly sixteen feet from and parallel with the center of said water main across the said highway fifty (50) feet to the easterly line of said highway and to land of said Avery; thence southwesterly along the easterly line of said highway and along land of said Avery forty-one (41) feet to a point twenty-four feet westerly of the center of said water main, measured at right angles; thence northwesterly across said highway in a line twenty-four feet from and parallel with the center of said water main fifty (50) feet to the westerly line of said highway; thence northeasterly along the westerly line of said highway forty-one (41) feet to the place of beginning.

A certain strip situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway leading from Rock Valley to Westfield, and on the easterly line of land of George Holden, said point being sixteen feet easterly of the center of the aforesaid water

Elisha Avery to George Holden

William R.
Pendleton
to
City of
Holyoke
Geo. Holden
to City of
Holyoke

main, measured at right angles, and running thence southeasterly across said highway, sixteen feet from and parallel with said water main eighty-five (85) feet to the easterly line of said highway and to land of William R. Pendleton; thence along the easterly line of said highway sixty-five (65) feet to a point twenty-four feet from the center of said water main; thence northwesterly twenty-four feet from and parallel with the center of said water main eighty-five (85) feet to the westerly line of said highway and to land of said Holden; thence northerly along the westerly line of said highway and along land of said Holden sixty-five (65) feet to the place of beginning.

James
Guilshan Est.
to
City of
Holyoke

A certain strip situated in said Westfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway leading from Westfield to Holyoke, on the easterly line of land of the aforesaid Pendleton and sixteen feet northerly of the center of the aforesaid water main, and running thence easterly in a line sixteen feet from and parallel with the center of said water main, across the said highway, eighty (80) feet to the easterly line of said highway and to land of the estate of James Guilshan; thence southerly along said easterly line of said highway and along land of said estate sixty-five (65) feet to a point twenty-four feet southerly from the center of said water main, measured at right angles; thence westerly twenty-four feet from and parallel with the center of said water main across said highway eighty (80) feet to the westerly line of said highway and to land of said Pendleton; thence northerly along the westerly line of said highway and along land of said Pendleton sixty-five (65) feet to the place of beginning.

A certain strip situated in said Westfield, bounded and described as follows, namely:- Beginning at a point

7

on the westerly line of the location of the Holyoke and Westfield Railroad, and on the line of land of the estate of the aforesaid Guilshan, at a point sixteen feet from the center of the aforesaid water main, and running thence easterly across said location in a line sixteen feet from and parallel with the center of said water main two hundred sixty-five (265) feet to land of the estate of said Guilshan and to the easterly line of said location; thence southerly along the easterly line of said location and along land of said estate one hundred forty-eight (148) feet to a point twenty-four feet southerly from the center of the aforesaid water main; thence westerly twenty-four feet from and parallel with the center of said water main, across said location, two hundred ninety-seven and five-tenths (297.5) feet to the westerly line of said location and to land of the estate of said Guilshan; thence northeasterly along the easterly line of said location and along land of the estate of said Guilshan one hundred fifty-two (152) feet to the place of beginning.

Albert Tatro
to City of Holyoke

A certain strip situated in West Springfield in said County of Hampden, bounded and described as follows, namely:- beginning at a point in the southerly line of the highway leading from Westfield to Holyoke and on the line of land of Albert Tatro, said point being twenty-four feet easterly from the center of the aforesaid water main, and running thence northerly across said highway in a line twenty-four feet from and parallel with the center of said water main fifty-two (52) feet to the northerly line of said highway and to land of the estate of the aforesaid Guilshan; thence easterly along the northerly line of said highway and along land of said estate fifty (50) feet to a point sixteen feet from the center of said water main; thence across said highway in a line sixteen feet from and parallel with the center of said water main fifty-two (52) feet to the southerly line of said highway

and to land of said Tatro; thence easterly along the southerly line of said highway and along land of said Tatro fifty (50) feet to the place of beginning.

A certain strip situated in said West Springfield, bounded and described as follows, namely:- Beginning at a point on the westerly line of the highway leading from Westfield to Holyoke and on the line of land of Andrew Dibble, said point being twenty-four feet easterly, measured at right angles, from the center of the aforesaid water main, and running thence northerly across said highway in a line twenty-four feet from and parallel with the center of said water main one hundred fourteen (114) feet to the easterly line of said highway and to land of *one* Noonan; thence northerly along the easterly line of said highway and along land of said Noonan one hundred sixty-five (165) feet to a point sixteen feet westerly from the center of said water main, measured at right angles; thence southerly across said highway in a line sixteen feet westerly from and parallel with the center of said water main one hundred ninety (190) feet to the westerly line of said highway and to land of said Dibble; thence southerly along the westerly line of said highway and along land of said Dibble ninety (90) feet to the place of beginning.

A certain tract situated in said West Springfield, bounded and described as follows, namely:- Beginning at a point on the easterly line of the highway leading from Westfield to Holyoke and the line of land of the aforesaid Noonan, said point being twenty-four feet, measured at right angles, from the center of the aforesaid water mains, and running thence northerly through the said highway in a line twenty-four feet from and parallel with the center of said water main two hundred ten (210) feet to the line between West Springfield and Holyoke; thence westerly along said line thirty (30) feet to the westerly line of

*Andrew Dibble
to
city of
Holyoke*

9
Belle Fredenburg alias
Belle Pesce
to
City of
Holyoke

the aforesaid highway and to land of Belle Fredenburg, alias Belle Pesce; thence southerly along the westerly line of said highway and along land of said Fredenburg alias Pesce one hundred eighty-five (185) feet to a point sixteen feet, measured at right angles, westerly from the center of said water main; thence across said highway in a line sixteen feet from and parallel with the center of said water main one hundred eighty (180) feet to the easterly line of said highway and to land of said Noonan ; thence northerly along the easterly line of said highway and along land of said Noonan one hundred fifty-five (155) feet to the place of beginning.

Holyoke &
Westfield R.R.
to
City of
Holyoke

A certain strip situated in Holyoke in said County of Hampden, bounded and described as follows, namely:-
Beginning at a point on the westerly line of the highway leading from Westfield to Holyoke, and on the easterly line of land of the aforesaid Fredenburg alias Pesce, said point being twenty-four feet easterly from the center of the aforesaid water main, and running thence northerly through said highway and through the location of the Holyoke and Westfield Railroad, in a line sixteen feet easterly from and parallel with the center of said water main, six hundred fifty (650) feet to the northerly line of said highway and to land of the City of Holyoke; thence westerly along said highway and along land of said City sixty-five (65) feet to a point sixteen feet westerly from the center of said water main; thence southerly across said highway in a line sixteen feet from and parallel with said water main, and through the location of the Holyoke and Westfield railroad, two hundred forty-five (245) feet to the westerly line of said highway and to land of said Fredenburg, alias Pesce; thence southerly along the westerly line of said highway and along land of said Fredenburg, alias Pesce three hundred sixty-seven (367) feet to the place of beginning.

Said City of Holyoke shall forever have the right to enter upon the strips of land above described for the purpose of laying, maintaining, replacing and repairing water mains and examining the condition thereof.

In witness whereof, we, Charles D. Colson, John J. Sullivan and Thomas F. Greaney, Water Commissioners of said City of Holyoke, hereto set our hands this sixth day of April, A. D. 1899.

Chas. D. Colson
John J. Sullivan
Thos. F. Greaney

MAINTENANCE ACCOUNT OF DEER

JUN 8 1889

Received of A. H. W. M. G. M.

Entered in Book 603, Page 258
Ottawa June 11, 1889

Rejoice

KNOW ALL MEN BY THESE PRESENTS, That the City of Holyoke, a municipal corporation in the County of Hampden, and Commonwealth of Massachusetts, in the exercise of powers conferred by Chapter 62 of the Acts of 1872, Laws of Massachusetts, being an act entitled, "An Act to Supply the Town of Holyoke with Pure Water," has erected a dam on Tatso brook, flowing into Ashley's pond in said Holyoke, about fifteen hundred feet above the junction of said Tatso brook with said Ashley's pond, for the purpose of forming a reservoir to conduct the waters of said Tatso brook to certain parts of the said City of Holyoke.

In accordance with said Act and for the purposes aforesaid, and of protecting the waters retained by said reservoir, the said City by its Water Commissioners, has taken and appropriated in fee, and does hereby take and appropriate in fee, the following described parcels of land, which are further shown in certain plans filed herewith, to which plans reference is made. Said parcels are described as follows:-

A certain tract of land situated in Holyoke in said Hampden County, known as the Brooks farm, and owned or supposed to be owned by William Brooks, bounded and described as follows: Commencing at a point located on the Westerly side of old County road, so-called, leading from Springfield to Southampton, and on the northerly line of the land owned by C. C. Abbey (the said land being purchased by the said Abbey from Peltiah Ely); thence running in a westerly direction along said northerly line of said Abbey's land for a distance of two hundred and seventy-seven (277) feet to a large Pine tree; thence making an angle of $73^{\circ}-45'$ and running in a northerly direction for a distance of four hundred and twenty-four (424) feet to a point designated by a stake surrounded by stones, said point

being the intersection of the westerly line of the old highway leading from Springfield to Southampton and the southerly line of wood road; thence along the westerly side of old highway in a southerly direction for a distance of four hundred and thirty (430) feet to point of beginning.

The above described tract contains 1.26 acres.

A certain tract of land situated in Holyoke in said Hampden County, known as a wood lot, and owned or supposed to be owned by Daniel O'Connell, bounded and described as follows: Commencing at a point designated by a stake surrounded by stones, (said point being the intersection of the westerly line of the old highway leading from Springfield to Southampton and the southerly line of wood road, also the intersection of the westerly and easterly line of the Brooks farm) ; thence running in a southerly direction for a distance of one hundred and fifty (150) feet to a stake surrounded by stones; thence making an angle of $90^{\circ}-0$ and running in a westerly direction for a distance of two hundred (200) feet to a stake surrounded by stones located on the northerly side of old wood road; thence making an angle of $121^{\circ}-45$ and running in a north-westerly direction for a distance of four hundred and thirty (430) feet to a point designated by a stake surrounded by stones; thence making an angle of $154^{\circ}-50$ and running in a northerly direction for a distance of eight hundred and sixty-eight (868) feet to a point designated by a stake surrounded by stones on the westerly side of old highway from Springfield to Southampton; thence along the westerly line of said highway in a southerly direction to point of beginning. The above described tract contains 3.94 acres.

A parcel of land owned or supposed to be owned by the Estate of James Moss and bounded and described as follows: One piece of land lying in the outward commons in the Third parish formerly of West Springfield, being the north-westerly part of the Ministry lots, so-called, in said outward commons, and bounded as follows, to wit: Beginning at a stake and stones by the highway at the north-westerly corner of Allen Wolcott's land; thence running West 2° South by marked trees 118 rods to the westerly end of the Middle tier of lots in said commons; thence northerly upon the westerly end of said tier 23 rods to Edmund Ashley's land; thence easterly by said Edmund's land and the highway 123 rods; thence southerly by the highway about 23 rods to the place of beginning, containing about 17 acres and 51-1/2 rods of land.

A parcel of land owned or supposed to be owned by Charles C. Abbey and bounded and described as follows: A certain lot of land situated in Holyoke in said Hampden County known as the wood lot bounded and described as follows:- Easterly by highway leading to Southampton; northerly by land of Julia M. Day et al; westerly by land of Alexander Day and by George E. Chidley; and southerly by land of James Moss, containing twenty-three acres, more or less.

Also a second parcel of land owned or supposed to be owned by Charles C. Abbey and bounded and described as follows: A certain lot of land situated in Holyoke in said Hampden County, known as a wood lot, bounded and described as follows: Commencing at a bound stone common to the lands of C. C. Abbey, George E. Chidley and James Moss Estate; thence running in a southerly direction for a distance four hundred and ninety (490) feet to a bound stone common to the lands of City of Holyoke and C. C. Abbey; thence in a westerly

direction making an angle of $93^{\circ}-50$ for a distance of three hundred (300) feet to a point common to the lands of City of Holyoke and C. C. Abbey, designated by a stake and stones; thence in a northerly direction making an angle of $70^{\circ}-45$ for a distance of five hundred and fifteen (515) feet to a point designated by a stake and stones on the boundary line of C. C. Abbey and George E. Chidley; thence in an easterly direction making an angle of $111^{\circ}-15$ for a distance of one hundred and sixty (160) feet to point of beginning. The above tract contains 2.55 acres,

A certain tract of land situated in Holyoke in said Hampden County, known as wood lot, and owned or supposed to be owned by George E. Chidley, bounded and described as follows: Commencing at a bound stone common to the lands of C. C. Abbey, George E. Chidley, James Moss Estate, and a second parcel of land owned by C. C. Abbey; thence running westerly along bound line of C. C. Abbey and George E. Chidley for a distance of one hundred and sixty (160) feet to a point designated by stake and stones; thence in a northerly direction making an angle of $72^{\circ}-50$ for a distance of four hundred and eighty (480) feet to a point designated by a bound stone common to lands of George E. Chidley, Alexander Day and C. C. Abbey; thence in a southerly direction making an angle of $19^{\circ}-15$ for a distance of four hundred and thirty (430) feet to place of beginning. The above tract contains $3/4$ of an acre.

Said City shall hold the above described land in fee for the purposes described for itself and its Successors.

IN WITNESS WHEREOF, We, John J. Sullivan, Thomas F. Greaney and Joseph A. Skinner, Water Commissioners of the City of Holyoke, have hereto subscribed our names ~~and~~ this *twenty-fourth* day of *July* 1900.

John J. Sullivan
* *Thomas F. Greaney*
Joseph A. Skinner

Rec'd July 25, 1900 and recorded in Hampden Co. Registry of Deeds in Book 619 Page 582.

attest *Wm R. Nellis*

Register

WAMPDEN COUNTY REGISTRY OF DEEDS

JUL 26 1900

Received J. H. LO. M. G. M. W.

SPRINGFIELD TO SOUTHAMPTON

City of Holyoke

G.G. Abbey

Geo. E. Ghidley

Alexander Day

2.55 acres
Land Taken By City

3/4 acre
of Holyoke

Julia M. Day et al

Land of
Chas. G. Abbey
Taken By
City of Holyoke

Land of
James Moss
or
Moss Estate
Taken By
City of Holyoke

City of Holyoke

ROCK VALLEY ROAD

MAP SHOWING LAND TAKEN
BY
City of Holyoke, Mass.
1900

Scale 1 in. = 200'-0" James L. Tighe, Eng'r.

HAMPSHIRE COUNTY REGISTRY OF DEEDS

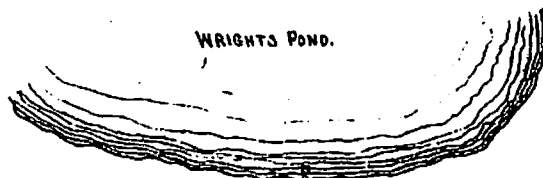
JUL 25 1900

Received 11 - 10 M. A.M.

John G. Sullivan
Thomas G. Brennan
Joseph A. Skinner

No. 1.

Station	Station	Distance	Course	Width
0.	2.	100 ft.	S 76° E	100
2.	11+55	960.	S 66° E	100
11+55	16	440.	S 66° E	80
16	17	100.	S 66° E	80
17	20+85	375.	S 66° E	80
20+85	To Highway	55.	S 66° E	80



Station 0.

Radius 198 feet.

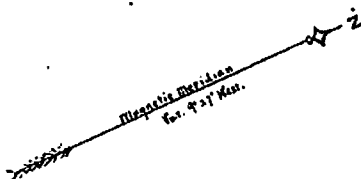
Station 3.

PLAN
— or —
LAND TAKEN
or occupied for
Holyoke Water Works
of
Austin and Lyman Goodyear

Area: Mowing 30 and 153 Rods.

A. & L. GOODYEAR
Mowing & Tillage.

A. & L. GOODYEAR.
Mowing & Tillage.



Station 11+80.

Station 16.

Station 17.

J. & H. WOOLCOTT.

J. & H. WOOLCOTT
Mowing

M. & D. DAVID NORTON
Mowing

SCALE: 1 inch = 200 feet.

To whom it may concern -

This is to certify that the Town of Holyoke Hampden County, Massachusetts, acting by its water commissioners hereto duly authorized, by Chapter Sixty-two of the acts of Massachusetts passed in the year A.D. 1872, and by the votes of said Town passed in pursuance thereof, does hereby take and hold the following lands and waters situated in said Holyoke and described as follows - and for the purpose of supplying said Town and its inhabitants with pure water - under the provisions of said act to wit: the entire waters of Ashley Pond and Wright's Pond ~~located~~ in said town and the waters which flow into and from the same. And also the waters of Samory Brook (so called) at a point in said Brook northwesterly of the dwelling house of Mr Bray, formerly of Julius Wright. Also a certain tract of land situated in said Holyoke, forty feet in width, extending from Station 17 on the center line on a plan entitled "Plan of land taken in occupancy for Holyoke Water works" recorded in Hampden Registry of Deeds Book 300 Page 601, to station 53 + 10 on said center line as laid down on said plan. Said tract having a uniform width of twenty feet, on each side of said center line. Said lands being owned or held as follows viz: Sixty feet from said Station 17 to the highway known as the "back street" being land belonging to the Estate of Esther Goodyear deceased.

and from said highway to Station 23+20
being land now or late of the widow of
David Norton and from said station
23+20. to Station 39. being land former
of Allen Wolcott the title whereof is now
in dispute - and from said station
39. to Station 53+10 being land now or
late of the said widow Norton.

Witness the hands of said commissioners
the twenty seventh day of January
A.D. 1873.

W. B. Parsons, } Water Commissioner
J. P. Russell }
J. P. Buckland } of Holyoke
L. W. Higgins }

Land and Waters

Taken by Town of Holyoke

Windsor Chap. Co. Oct. 1872.

To be filed
see note 2nd 5th

Recd April 26th 1873 at 3⁰⁰ P.M.

& filed with Worcester County

Recd

by James C. Buffum Reg.

Holyoke Dam Inspections - 1956 - 1969



1956 Reports

Inspections by Tighe & Bond.

Abutters	Mt Tom Reservation
----------	--------------------

Abutters	Smith's Ferry
----------	---------------

City/Town	Holyoke
-----------	---------

Dam	McLean Reservoir Dam
-----	----------------------

Dam	Bluener Dams
-----	--------------

Dam	Ashley Pond Dam
-----	-----------------

Dam	Skinner Dams
-----	--------------

Dam	Bray Reservoir Dam
-----	--------------------

Dam	Carpenter Ice House Dam
-----	-------------------------

Dam	Holyoke Water Power Company Dam
-----	---------------------------------

Dam	Kennedy Dam
-----	-------------

Dam	Lake Bray Dam
-----	---------------

Dam	Cote Dam
-----	----------

Dam	Whiting Reservoir Dam
-----	-----------------------

Dam	Holyoke Paper Mill Dam
-----	------------------------

Dam	YMCA Dam
-----	----------

Dam	Eger Dam
-----	----------

Dam	Zenner Dam
-----	------------

Dam	Whiting Street Intake Dam
Dam	Schaeffer Dam
Streets	Route 5
Water	Connecticut River
Water	Kennedy Pond
Water	Lake Bray
Water	Whiting Reservoir

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, INC.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

Nov. 20, 1956

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Massachusetts

Gentlemen:

Recent inspections of dams in the City of Holyoke have now completed the inspection routine in this city, and all dams have been examined once or more times during 1956. The following is a report of the condition of the various dams within the City of Holyoke.

A. Holyoke Water Power Co. Dam on the Connecticut River. This dam is located on the Connecticut River between Holyoke and South Hadley. It is a stone masonry dam and extends for the full width of the bed of the river. The abutment on each side of the river is composed of massive granite blocks. The dam provides a pond for power purposes and diverts water into the canal system to the City of Holyoke. The dam itself, the abutments, and the canal system are the property of the Holyoke Water Power Company. This dam is in excellent condition. During the flood of August 1955, no damage was done to the dam or its related structures.

B. P. J. Kennedy Dam. This is a stone masonry dam with a stone masonry notch spillway, situated on Kennedy Pond, just westerly of State Highway Route 5, in the Mt. Tom Junction section of the City. The dam forms a small pond for private recreational purposes. The dam is situated on the stream that passes thru Mt. Tom State Reservation. No damage of consequence was done to the Kennedy Dam, in the flood of August, 1955. This dam is in very good condition.

C. Schaeffer Dam. This is a very small dam located on a small brook that drains under Route 5, in the vicinity of Smith's Ferry. The dam is to the south of the road leading to the Mt. Tom State Reservation, from Highway Route 5. The dam forms a pond that is used for private recreational purposes. The dam itself is of earth construction with a concrete core wall. The spillway consists of a shaft with a tube spillway thru the embankment and core wall of the dam. During the flood of August, 1955, the water of the pond washed over the dam but because of the fact that the dam is extremely wide and due to the existence of the concrete core wall, no damage of consequence occurred to the dam and the structure was not endangered. This dam is in satisfactory condition.

D. Lake Bray Dam, Mt. Tom Reservation. This dam is located on Lake Bray and the embankment of the dam carries the roadway leading to the reservation from State Highway, Route #5. During the flood of August, 1955, a portion of the earthen embankment of the dam was washed thru. During the past year, the dam has been repaired and when last inspected on Nov. 17, 1956, all repair work had been completed and the pond was filling. A new vertical shaft and tube spillway has been constructed thru the dam in the location of the breach washed thru by the storm of 1955. The old spillway remains and the dam, as now existing, not only has the original spillway, but this structure is supplemented by the new spillway. The new construction was well and carefully done and the new spillway facility is in good condition. An improvement to this spillway facility could be made, however, by the riprapping of the channel downstream of the spillway for an additional 25 feet or more. Just downstream from the end of the riprap, the spillway channel turns to the left. There is no protection along the right bank of this spillway channel to prevent a washout occurring. Such a washout will not endanger the dam. However, it can be a source of required maintenance following heavy storms. If possible, at least the right bank of the channel at this curve should be riprapped. Surface water chutes of asphaltic concrete should be extended to flat ground or riprap placed at the ends of the chute. This particularly applies to the two chutes on the dam fill on the downstream face of the embankment. Bray Lake Dam is in very good condition. The recommendations contained herein are desirable but not absolute necessities.

E. Whiting Street Reservoir Dam, Holyoke Water Department. This dam is a massive masonry structure and earth embankment forming Whiting Street Reservoir. The dam is situated to the west of Mountain Park and the reservoir formed by the dam is easterly of Mt. Tom. During the flood of August, 1955, the water in the reservoir rose to a height whereby it passed over the top of the dam for a number of hundreds of feet along its length. In passing over the masonry structure the storm water washed out large sections of the earth embankment downstream of the masonry section. This earth embankment has been replaced and all damage to the dam repaired. The damage caused by the flood of August, 1955, did not weaken or breach the dam. The Whiting Street dam is in excellent condition. Plans are being considered by the Owner for the enlargement of the spillway at this dam.

F. Whiting Street Intake Dam, Holyoke Water Department. This is a masonry structure located downstream from the dam just described. It impounds a small body of water that was formerly used as an intake reservoir for the water system of the City. At the present time this body of water is not used for that purpose. The dam is a masonry structure and is well maintained by the Owner. This dam is in good condition. No damage occurred to the structure during the flood of August, 1955.

G. William Skinner Dams. There are two small dams on the property of William Skinner located westerly of Northampton Street and southerly of the Wyckoff Park area. Both of the dams are earth and stone structures and impound very small ponds for private recreational use. No damage of consequence occurred at either of these small dams during the flood of August, 1955. These dams are in good condition. The upper dam is located adjacent to the Skinner home while the lower dam is located on the rolling front lawn between the home and Northampton Street.

H. Blumer Dams. These dams, the property of Blumer, are located in Rock Valley on Broad Brook. The lower of the two dams, known more recently as Delaney Dam, is a very small structure that has not impounded any water for a number of years. Only traces of this structure remain. The upper dam is directly upstream from the main highway in Rock Valley. This was a small stone and earth structure and impounded a very small body of water for personnel use. This structure has not been used in a number of years and for all practical purposes has been considered abandoned. Both of the Blumer dams are inspected annually to determine whether or not any change has occurred in the structures and, particularly, to be certain that no enlargements or major changes are made that would require the filing of plans and specifications.

I. McLean Reservoir Dam, Holyoke Water Department. This dam is situated at McLean Reservoir just south of Westfield Road, State Highway Route 202. It is a high earth embankment and impounds water for municipal water supply purposes. The structure is in excellent condition and suffered no damage during the flood of August, 1955.

J. Bray Reservoir Dam, Holyoke Water Department. This dam is a small earth structure located adjacent to Westfield Road, State Highway Route 202, and just upstream from the Ashley Pond system. During the flood of August, 1955, this dam was washed thru by the flood waters. A large and deep breach was formed in the embankment and the pond that is now retained by the dam is small and shallow. Plans are being prepared for the repair of this structure. The loss of Bray Reservoir Dam presents no threat to persons and property downstream since immediately below this dam is situated the Ashley Pond system of the Holyoke Water Department. This is a relatively large reservoir that can easily absorb the capacity of Bray Reservoir.

K. Ashley Pond Dam, Holyoke Water Department. This is a very low earth and masonry structure that impounds water to form the Ashley Pond Reservoir of the Holyoke Water Works System. Ashley Pond is a natural pond and the dam simply raises the level of the pond to artificially store water above natural pond level. A small masonry notch spillway is located in the earthen dam at about the central section. The dam is located at the southerly end of Ashley Pond near the N.Y., N.H. & H. railroad track connecting Westfield with Holyoke. During the flood of August, 1955, no damage of consequence was done to the dam and spillway at Ashley Pond. During the past summer certain maintenance and repair work was done to the spillway masonry and at the present time this dam is in excellent condition.

L. Eger Dam. This is a small dam situated just north of the tracks of the N.Y., N. H. & H. railroad and southerly of Lower Westfield Road. The dam is an earthen embankment and the pond formed is very shallow and small. The pond has been used in the past for farm and personnel purposes. The pond formed by the dam is so small that its loss would cause no damage to persons or property downstream. The dam was damaged during the flood of August, 1955, but the damage that occurred was of no consequence. The structure is dilapidated but presents no problem.

M. Carpenter Ice House Dam. This dam is situated northerly of Lower Westfield Road, at the rear of the old Carpenter Ice House. The dam is an earthen embankment and impounded water for ice-making purposes. For some time this dam has been abandoned and no pond of consequence has been formed by the structure. The spillway section was damaged many years ago and a large notch formed in the section of the dam where the spillway is located. This notch together with a second breach thru the earth embankment prevents the formation of a large pond of water behind the dam. When last inspected these two breaches were open and free for the flow of excess storm water. No water was being ponded by this structure.

N. L. Cote Dam. This is an earthen embankment, very low in height, that formed a fairly large but very shallow pond for private purposes. It is located to the north of the tracks of the N.Y., N.H. & H. railroad and is to the east of the Eger Dam hereinabove described. This dam has been abandoned for many years and no water has been ponded behind the structure. The structure is examined annually to be certain that no changes are made that would cause the formation of a pond of water behind this structure.

O. Holyoke Paper Mill Process Water Dam. This is a very low and long earthen embankment that forms a small pond in the Springdale Section of Holyoke. It is privately owned but at one time was used by the Holyoke Paper Mill Company as a source of process water. At present the pond is used for private recreational and aesthetic purposes. The area around the dam has recently been cleaned and downstream of the dam the surface of the ground has been cleared of all debris, brush, etc., and has been levelled off. This cleaning seems to have been in connection with the industrial development now taking place in the Springdale area of Holyoke. There appears to be a small amount of seepage taking place under and thru the dam but because of the muck condition at the downstream toe of the dam, this seepage probably will not be troublesome. This condition will be watched closely in the next few months. During the flood of August, 1955, no damage of consequence was done to the structure. Over the past years this structure has received little maintenance and has stood up well.


In summary, of the seventeen dams and dam sites in the City of Holyoke, only two dams were washed thru in the flood of August, 1955.

One of these dams, at Bray Lake, at the Mt. Tom Reservation, has since been repaired and is now in service. Substantial additional spillway capacity has been added to this structure.

The other dam, Bray Reservoir Dam, has not as yet been repaired, but plans and specifications of the repair work are being prepared and it can be expected that this structure will be in service in 1957 with a substantial increase in its spillway capacity.

One dam, the Whiting Street Reservoir Dam, has required major repairs as a result of the flood. However, the damage to the dam did not endanger the structure and the repairs that have been completed return a substantial safety factor to the hydraulic and structural stability of this dam. Damage at other structures as a result of the flood was very minor and only required normal routine maintenance.

Respectfully submitted


George H. McDonnell
County Hydraulic Engineer

GHM/cmb

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991
GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

CD Holyoke

Dec. 31, 1957

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

Recent inspections of dams in the City of Holyoke have now completed the inspection routine in this City, and all dams have been examined one or more times during 1957. The following is a report on the condition of the various dams within the City of Holyoke.

A. Holyoke Water Power Co. Dam on the Connecticut River

This dam is in very good condition.

B. P. J. Kennedy Dam

This dam may need some maintenance of the spillway masonry in the future. At the present time the dam is satisfactory. There is a small amount of leakage thru the drawdown conduit. In general, the dam is in good condition.

C. Schaeffer Dam

This dam located off Northampton Highway and southerly of the Road to Mt. Tom State Reservation is very wide and quite low in height. In the earth embankment of the dam adjacent to the two masonry manholes there is a cavity that should be investigated and repaired. It would appear as if this cavity is the result of a crack or an open joint in the drainpipe. By excavating the cavity and examining the drainpipe, proper repairs can be made. It is recommended that these repairs be made in the near future.

D. Lake Bray Dam, Mt. Tom Reservation

This dam is in good condition. Leakage that was corrected by the construction of a concrete cutoff collar seems to have been effectively controlled.

E. Whiting Street Reservoir Dam, Holyoke Water Works

This dam is in very good condition. Improvements to toe drainage in the recent past have resulted in good and dry embankment conditions.

F. Whiting Street Intake Dam, Holyoke Water Works

This dam is in satisfactory condition.

G. William Skinner Dams

Upper Dam This structure was found to be in satisfactory condition. Large tree growth on the dam may require attention in the near future. For the present time, the dam is satisfactory.

Lower Dam This structure is also in good condition. Large tree growth may require certain maintenance in the near future but for the present time no work is needed.

H. Bluemers Dams

Upper Dam This structure has been breached for many years. A free waterway exists for the passage of storm flows.

Lower Dam This dam, known in recent years as the Delaney Dam, has not impounded any water for years. Only traces of the structure remain and a free waterway exists for the passage of brook flows.

I. McLean Reservoir Dam, Holyoke Water Works

This dam is in very good condition.

J. Bray Reservoir Dam, Holyoke Water Works

This dam is still breached as the result of the flood of August, 1955. Plans and specifications have been prepared for a new dam. The construction has been awarded and it is expected that work on the structure will be started in the near future.

K. Ashley Pond Dam, Holyoke Water Works

This dam is in very good condition.

L. Eger Dam

Hardly any water is ponded at this structure. The dam is quite low and though the pond was once used for farm operation purposes, it is doubtful if the body of water serves any special purpose at the present time. Though

the dam is dilapidated, there is so little water stored that the structure presents no problem from the point of view of safety downstream.

M. Carpentier Ice House Dam

This structure has been breached for a number of years. When last inspected two openings in the dam were sufficiently wide to allow for free flow of storm runoff.

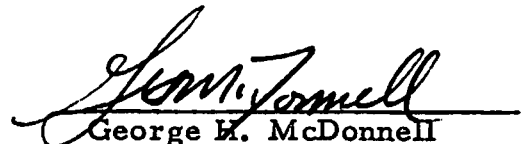
N. L. Cote Dam

This dam has been abandoned for many years and a sizable breach has been cut thru the structure.

O. Holyoke Paper Mill Process Water Dam

The pond formed at the site of this dam is now used for private recreational and aesthetic purposes. Construction of the Springdale Park Industrial area and the Railroad embankment westerly of the area has resulted in the diminution of the old earth dam. The Railroad embankment encroaches on the dam and is somewhat higher than the top of the old dam. Consequently, since the area downstream has been filled to a height greater than that of the dam, no problem exists regarding the possibility of the breaking of the dam and the release of stored water. A storm drain has been laid into the pond area and the pond now is nothing more than a large open space in a drainage system. Should the drain pipe plug or be incapable of carrying extremely high rates of storm runoff, water would overflow onto the paved parking area and streets of the Industrial Development to eventually be carried away in the storm drain system thru catch basin openings. Thus, no structure now exists, the breaking of which would endanger persons and property downstream except for a very shallow dike on the southerly side of the pond. Conditions at this pond are satisfactory.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

Dec. 11, 1958

CD Holyoke

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Recent inspections of dams located in the City of Holyoke have completed the inspection routine in this community and all dams have been examined one or more times during the year 1958. The following is a report on the condition of the various dams within the City of Holyoke.

A. Holyoke Water Power Co. Dam on the Connecticut River

This dam was found to be in very good condition.

B. P. J. Kennedy Dam

The embankment of the dam, the spillway and the downstream dry masonry wall were found to be satisfactory. Though in the report of last year it was pointed out that some maintenance of the spillway might be required in the future, the condition at the spillway remains unchanged and the structure is satisfactory.

C. Schaeffer Dam

This small dam located off of the Northampton Highway and just south of the road that leads to Mt. Tom State Reservation, is a low but very wide structure. Conditions were found to be satisfactory.

D. Lake Bray Dam, Mt. Tom Reservation

This dam was found to be in good condition. A careful examination has been made of the dam at various times during the past year to detect any possibility of the return of leakage along the large new corrugated iron conduit. No sign of leakage has been found. Apparently, the concrete cut-off collar is working satisfactorily.

There has been some settlement of the earth placed in the portion of the dam washed out in the flood of August, 1955. As of the moment, nothing detrimental regarding this compaction has been noted.

E. Whiting Street Reservoir Dam, Holyoke Water Works

This dam was found to be in very good condition.

F. Whiting Street Intake Dam, Holyoke Water Works

This dam is in satisfactory condition.

G. William Skinner Dams

1. Upper Dam The dam was found to be in good condition. Large tree growth mentioned in the report of last year seems to be having no bad effects upon the earth embankment forming the dam.

2. Lower Dam This structure, together with its spillway, were found to be in satisfactory condition.

H. Bluemers Dams

1. Upper Dam This structure has been breached for many years, and the breach is wide enough to allow for the free passage of brook flows. Conditions at the site of this dam have not changed during the recent years.

2. Lower Dam This dam, known as the Delaney Dam, has not impounded water for many years. Only traces of the structure remain and a free waterway exists for the passage of brook flows.

I. McLean Reservoir Dam, Holyoke Water Works

This dam was found to be in satisfactory condition.

J. Bray Reservoir Dam, Holyoke Water Works

During the past year, this flood breached dam was repaired based upon the new design on file in your office. The work has been completed in a satisfactory manner and water is ponded behind the new spillway construction. This spillway was built of porous material and during normal and low flows, water passes thru the pervious spillway construction. This design provides for the coarse filtration of the water as it passes from Bray Reservoir into Ashley Reservoir.

The old original earth embankment not damaged in the flood of August, 1955 is in good condition.

K. Ashley Pond Dam, Holyoke Water Works

This dam is in satisfactory condition.

L. Eger Dam

This structure ponds very little water. There is a breach at the left side of the small earth dam that allows passage of brook flows with a minimum of ponding. The waterway is large enough to allow for the passage of flood flows.

M. Carpentier Ice House Dam

This structure has been breached for a number of years and has not stored water. No water was stored in the dam at the time of the last inspection and the breach was wide enough to allow for the passage of flood flows.


N. L. Cote Dam

This dam has been breached for many years and no water has been ponded. The breach allows for the passage of flood flows.

O. Holyoke Paper Mill Process Water Dam

This dam is in the same general condition as reported a year ago. The pond now is nothing more than a widening in the drainage system and the construction at Springdale Park Industrial Center has eliminated the dam. There seems to be no further need of inspecting this structure. Storm drains carry water from the pond into the Municipal drainage system for discharge to the Connecticut River. Should the flow of the brook exceed the ability of the drains to carry water, then the water would flow across the paved parking areas and streets of this Industrial Development. This is only a normal occurrence when a drainage system is inadequate to meet major storm conditions. No release of stored water could occur because of the changed topography at this site.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/mb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holyoke
Jan. 24, 1961

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

Inspections conducted throughout 1960 at the various dams situated in the City of Holyoke revealed that all of the dams were in satisfactory condition. The following is a report on the condition noted at the various dams inspected.

A. Holyoke Water Power Co. Dam in the Connecticut River

This dam was found to be in very good condition and in a good state of repair and maintenance.

B. P. J. Kennedy Dam

This dam is still in the same general condition as previously reported. If the new Rte 91 is to be constructed in the location as previously planned, the dam, spillway and pond will be removed by highway construction.

C. Schaeffer Dam

This dam was noted to be in satisfactory condition when inspected in the late Summer. The spillway conduit was clear and wide open to allow for passage of overflowing water. The dam embankment was found to be in satisfactory condition. It is a very wide embankment and low in height.

D. Lake Bray Dam, Mt. Tom Reservation

Both the embankment and the two spillways were found to be in good condition when inspected twice during 1960. Settlement of the roadway on the embankment at the new spillway tube is no cause for concern and is the result

CD Holyoke
Jan. 24, 1961

of soil compaction in the area of the new large spillway tube. A careful examination of the tube and of the embankment surface on the downstream side of the dam shows no leakage or seepage thru the embankment that would be related to the slight road surface settlement.

E. Whiting Street Reservoir Dam, Holyoke Water Works

The dam and spillway were found to be in satisfactory condition. The large earth embankment in front of the stone masonry dam itself was in good condition. Sod growth is thick and the shape of the embankment is excellent.

F. Whiting Street Intake Dam, Holyoke Water Works

This dam is still inactive and no water has been ponded in 1960. The drawdown gate is kept open. The stone masonry of the dam was found to be in fair condition. It is doubtful if the Water Works will make use of this dam in the future but it will be inspected periodically.

G. William Skinner Dams

1. Upper Dam The embankment of this small dam was found to be in satisfactory condition. The spillway was operating satisfactorily.
2. Lower Dam The embankment and the spillway at this small dam were found to be in satisfactory condition.

H. McLean Reservoir Dam, Holyoke Water Works

The embankment and spillway at this dam was found to be in satisfactory condition at the time of the last inspection. Brush growth on the embankment was not too bad and some brush control work has been done in the general area of the dam. Work on construction of the relocated highway Rte 202 across the reservoir began during the latter part of 1960. The work of constructing the highway in the reservoir has no effect whatsoever upon the dam at McLean Reservoir.

I. Bray Reservoir Dam, Holyoke Water Works

The embankment and the rock filled spillway at this dam were both found to be in good condition.

**TIGHE
& BOND CONSULTING ENGINEERS**

3.
CD Holyoke
Jan. 24, 1961

J. Ashley Pond Dam, Holyoke Water Works

This dam was found to be in satisfactory condition. Both spillways and the earth embankment section were found satisfactory.

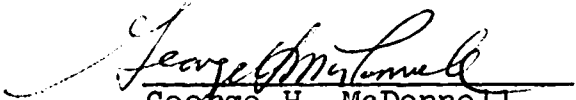
K. Carpentier Ice House Dam

This structure, breached for many years, does not pond water. With the construction of the new Whiting Farms Road to serve the planned industrial area for Holyoke, the dam will be eliminated and the pond area eventually filled. As now proposed, the new road will be built early in 1961 and consequently further inspections at the site of the Carpentier Ice House Dam will no longer be required.

L. L. Cote Dam

This dam, breached for many years, ponds no water. The breach safely passes flood flows. The pond area in general has been heavily overgrown with vegetation and grass. Since the dam could be reactivated at some future date by the closing of the breach, the site is inspected from time to time to be certain that the breach is kept open unless the dam is rebuilt in accordance with approved plans and specifications. Since loss of the dam, if reactivated, might cause damage to persons and property downstream, a periodic inspection of the site will continue.

Respectfully submitted


George H. McDonnell
County Hydraulic Engineer

GHM/cmb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holyoke
December 3, 1963

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Massachusetts

Gentlemen:

Inspections conducted at various dams located within the City of Holyoke have now resulted in all dams within that City being inspected at least once during this year. The following is a summary of conditions noted at various dams located in Holyoke.

A. Holyoke Water Power Co. Dam

This dam, as usual, was found to be in very good condition. Abutment areas are well maintained as is the dam itself.

B. P. J. Kennedy Dam

This structure no longer exists. With the construction of the new Interstate Rte 91 thru the Holyoke area, the dam and pond have been eliminated. A large reinforced concrete box culvert was being constructed on the day of inspection at the site of and immediately downstream from where the dam formerly existed. The structure can be removed from the County records as an active dam.

C. Schaeffer Dam

The embankment of this dam was found to be in good condition. It has a good growth of sod and is well maintained. The inlet to the spillway was satisfactory and clear of any debris. The tube spillway was OK and no sign of rusting was evident. Water level in storage was about 1 ft. below the top of the flashboards in the spillway inlet. No toe seepage was noted.

D. Lake Bray Dam

The embankment was OK. The main spillway tube was in good condition and no sign of seepage along the outside of the tube was evident. The inlet shaft to the tube was satisfactory and the entry rack clean and clear of debris. No flashboards were on this dam.

The emergency spillway tubes were clear and clean of any debris. No flashboards were in place in front of these tubes. The inverts of the twin tubes are beginning to rust out but the rusting action is not as yet serious.

Road settlement directly over the new tube spillway is no worse than noted in recent years. Any further settlement will probably not take place as long as the seepage along the outside of this tube is controlled. The concrete collar constructed a few years ago apparently is functioning satisfactorily.

E. Whiting Street Reservoir Dam - Holyoke Water Works

The embankment was satisfactory in every way. No toe seepage was noted and at the spillway conditions were satisfactory. The masonry is in need of some maintenance but conditions are not as yet serious enough to require the submission of a notice to the Water Department. Turf cover of the embankment for its entire length, both on the top and downstream side was found to be satisfactory.

F. Whiting Street Intake Dam - Holyoke Water Works

This structure was in the same general condition as reported in previous years. The dam is inactive. It was found to be safe and satisfactory and though it needs some maintenance at the masonry, the condition is not bad.

G. William Skinner Dams

Upper Dam The embankment at this dam was found to be in very good condition. It is well shaped and covered with an excellent growth of sod. No seepage was noted at the toe of the embankment. The spillway notch was clean and clear and functioning satisfactorily. Water level was at the crest of the notch spillway.

Lower Dam The embankment was in good condition. It is a very wide embankment for its low height. No toe seepage whatsoever

was noted. It has a good sod cover and it is well maintained. The spillway opening channel was OK and clear. The inlet to the tube culvert was satisfactory.

H. McLean Reservoir Dam, Holyoke Water Works

The embankment was OK. The upstream stone paving was in good condition. Since water level in storage was quite low, much of this paving could be inspected. The downstream turf cover on the embankment is good. Toe area at the dam embankment was found in good condition. Dumped rock fill at the toe improves the embankment safety. This rock fill was placed as spoil from local construction work.

Spillway masonry was found to be satisfactory. However, in a year or two it will be necessary to repair the concrete cracks and voids. However, for the present time and thru 1964, conditions will be OK. In general, the entire dam has been well maintained with the exception of the masonry spillway.

I. Bray Reservoir Dam, Holyoke Water Works

The embankment was OK but in another year it will be necessary to cut all brush and small tree growth from the surface. The spillway notch, lined with rock fill, was in good condition. The toe of the dam embankment was OK and no evidence of seepage was noted. Loss of this dam would result in no damage to persons and property downstream, since the discharged water would be absorbed by Ashley Reservoir, where it would only affect the water surface by an inch or two. Stone paving on the upstream face of the embankment was in good condition.

J. Ashley Pond Dam, Holyoke Water Works

The small low embankment at this reservoir was in good condition. It has a good turf cover and though many trees grow from the embankment they are well separated and they do not endanger the dam. The spillway notch was found to be OK and apparently has had some maintenance work in the recent past. Water level in storage was quite low. Consequently, no toe seepage whatsoever was noted. The emergency spillway inlet and tubes under the adjacent roadway were clean, clear and satisfactory.

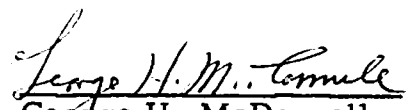
K. Zenner Dam (Now YMCA)

This dam is quite dilapidated and in very poor condition. However, it is not apt to be washed out even in flood flow. The spillway opening is in poor condition and at the time of inspection water level in storage was at the crest of the notch.

Reconstruction of this dam is planned for the immediate future in accordance with plans and specifications filed a short time ago. It is expected that reconstruction of the dam will take place early in 1964.

Though the dam is dilapidated and in poor condition, there is no need to call attention of this condition to the Owner, since reconstruction of the dam is definitely planned.

Respectfully submitted


George H. McDonnell
County Hydraulic Engineer

GHM/cmb

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holyoke
December 31, 1964

The Hon. the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Inspections conducted at the various dams situated within the City of Holyoke have now resulted in all dams within that City having been inspected at least once during the year 1964. The following is a summary of conditions noted at the dams situated within Holyoke.

A. Holyoke Water Power Co. Dam

This dam was found to be in very good condition. The trial section of inflated rubber flashboard is still on the crest and functioning satisfactorily. Flashboards on the dam were to their normal height at the time of inspection.

A new gatehouse together with new gates and operating mechanisms are all under construction at the head works of the canal on the Holyoke side. Upon completion of these new gates and their head works structure, conditions will be greatly improved in connection with the operation of the canals.

B. Schaeffer Dam

The embankment of this dam was in very good condition. It is covered with a good growth of turf and it is well shaped. Little or no toe seepage was evident at the embankment. This embankment is very wide for its low height. The inlet structure to the spillway was in good condition and water level in storage was at the crest of the spillway structure. The spillway tube was okay, it was clear of any debris and was functioning satisfactorily.

C. Lake Bray Dam

The embankment of this dam was in satisfactory condition. Its surface is a bit rough in places particularly on the side slopes but the condition of erosion and wear on the surface does not reduce the safety of the dam. Little or no toe seepage was noted. The settled location of the embankment on the roadway just over the conduit built after the flood of 1955 is in the same general condition. The shaft inlet to the new spillway tube was good. The new tube was okay and found to be functioning properly. There was evidence noted of water pressure against the outside surface of the tube along its upstream section, particularly upstream of the concrete collar built around the tube. However, downstream of the collar there was no evidence of pressure and no water squirted thru bolt holes. A careful examination of the toe of the embankment and the outside surface of the tube at its downstream edge showed no indication of seepage along the outer surface of this tube.

Water level in storage was at the crest of the shaft spillway.

The old twin tube spillway is becoming more rotten and eventually must be either replaced or abandoned. At the time a decision must be reached as to the future of the old twin tube spillway, a study of runoff conditions on the drainage area should be made. At that time, a decision can be made as to whether or not the twin tube spillway should be replaced or whether the new spillway will have sufficient capacity to meet the needs of the dam allowing for the abandonment of the old twin tube structure. The headwall at the twin tubes is cracked, dilapidated and in poor alignment.

Provisions should be made in a budget either in 1965 or in 1966 to make the necessary changes and correct the condition at the old twin tube spillway.

D. Whiting Street Reservoir Dam - Holyoke Water Works

The embankment of this dam was in very good condition. The turf cover was excellent and the upstream stone wall was okay. No toe seepage whatsoever could be noted along the embankment. The spillway masonry was okay and no flashboards were in place on the crest. Though spillway concrete is spalled and cracked to some extent, the conditions at the spillway are not bad. Water level in storage was down about 8 ft. to 10 ft. below spillway crest.

E. Whiting Street Intake Dam - Holyoke Water Works

This dam is no longer active. The dam embankment to the left of the gatehouse has been entirely removed and the entrance to a very large box culvert has been constructed at the site of the embankment fill. The culvert construction passes downstream and under a new access road that is being built to serve the dam and property of the Holyoke Water Works. This new construction is all a part of Route 91 construction.

The dam will no longer be able to impound water since any flow in the brook will now be diverted directly into the culvert thru the sizeable inlet structure and no provisions have been made for stoplogs or gates to hold back the flow of the stream.

The dam will be inspected again next year to be certain that in the future there will be no chance of water being impounded.

F. William Skinner Dams

Upper Dam The embankment of this small dam was well shaped and covered with a good growth of turf. No toe seepage was noted. The spillway notch was clean and clear of any debris and water level in storage was at the crest of the notch. The dam has been very well maintained.

Lower Dam The embankment of this dam was in very good condition. It is very wide for its shallow height and is covered with a good growth of turf. No toe seepage was noted at the embankment. The spillway channel and the inlet to the conduit structure were both okay and free of any debris. Water level in storage was at the elevation of the floor of the spillway channel.

G. McLean Reservoir Dam, Holyoke Water Works

The embankment was found to be in very good condition. The face on the water side of the dam was examined carefully and the stone paving was found to be good. Turf on the downstream face and the road at the top of the embankment were both in good condition and well maintained. Rock fill toe sections were okay. No toe seepage was noted at all.

The spillway structure was satisfactory. Cracking and spalling of the masonry previously reported is no worse than noted a year ago and consequently, it is not necessary that repairs be recommended at the

present time. Water level in storage was down at least 10 ft. below the crest of the spillway. The spillway channel and entry-way to the spillway crest were free of debris.

I. Bray Reservoir Dam, Holyoke Water Works

The embankment of this dam was in very good condition. The upstream sod and stone paved surface were good. The top of the dam and the downstream surface had a good growth of sod. The old gate well at the top of the embankment has been completely filled with gravel and abandoned. There is no further need for this gate well. The new large stone-lined channel spillway is adequate to allow for the transfer of water from Bray Reservoir to Ashley Reservoir downstream. The spillway channel and its related paving were found to be in very good condition.

J. Ashley Pond Dam, Holyoke Water Works

The embankment of this small dam was in good condition. It was noted to be quite stable and there was no evidence of seepage. Trees are numerous on the embankment but they do not endanger the structure. The spillway masonry was found to be satisfactory. Water level in storage appeared to be about 5 ft. below the crest of the spillway. The emergency spillway structure located to the right of the main spillway and the tubes under the highway were found to be okay.

K. Zenner Dam (Now YMCA)

The embankment of this dam was found to be under construction. Improvements have been made to the embankment portion located to the right of the spillway. To the left of the spillway the embankment is quite rough. The downstream stone wall has been improved and straightened somewhat. There appears to have been some pointing of the stone masonry joints.

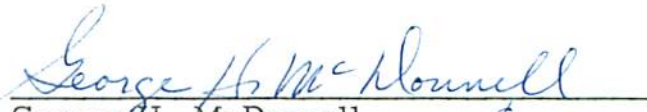
On the day of inspection, it was noted that water was discharging from an old pipe outlet located to the left of the spillway and water appeared to enter this pipe thru the fill of the embankment. Since the portion of the embankment wherein the water appeared to be entering the pipe is still quite rough and apparently is under construction, this condition will probably be taken care of in the normal course of events of rebuilding the dam.

The new notch spillway was in fairly good condition but stoplogs in the slots were at an elevation higher than the top of the embankment of the

small earth dam. The stoplogs were removed by the undersigned during the inspection.

This dam is being reconstructed in accordance with filed plans and specifications and construction work has apparently been stopped until good weather in the Spring of 1965. The dam will be inspected from time to time as the work progresses and the Owners advised of any changes that should be made or of any construction procedures that are not acceptable.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/mg

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holyoke
November 15, 1966

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

Inspections conducted at the various dams situated within the City of Holyoke have now resulted in all dams located within Holyoke having been inspected at least once during the present year. The following is a summary of conditions noted at each of the dams in the City of Holyoke.

A. Holyoke Water Power Company Dam

As usual, this dam was found to be in very good condition. The stone masonry of the dam itself and the stone and concrete masonry of the abutments are in good condition. Flashboards have been maintained on the dam at the normal height. The new gatehouse reported under construction at the canal head works on the Holyoke side of the dam has been completed and is in operation.

During this present year, work was done in the bed of the river at the toe of the dam to correct erosion conditions in and on the basic foundation rock.

In the opinion of the undersigned, this dam is safe.

B. Schaeffer Dam

This dam is not being maintained as well as in past years. However, the structure was found to be in satisfactory condition. The concrete of the spillway inlet was good and

stoplogs were in the slots to the normal height. Water level was at the crest of the upper stoplog and no debris was in the spillway inlet.

The embankment itself was okay. It is covered with a good growth of turf and there was no brush growth noted. The embankment is very wide for its low height. The toe area of the embankment was in satisfactory condition. No erosion is occurring in the bed of the brook at the spillway tube outlet.

In the opinion of the undersigned, this dam is in satisfactory condition.

C. Lake Bray Dam

The spillway inlet shaft of this dam, built following the flood of August, 1955, is in good condition. No flashboards were on the crest of the inlet and water was overflowing the crest. The steel bar-rack on top of the inlet was free of any debris.

The stone paving on the upstream face of the embankment was found to be satisfactory. The main spillway tube through the embankment was okay and was discharging a good quantity of water. No seepage whatsoever was noted along the outside of the spillway tube. The road settlement on the embankment, directly over the spillway tube, was noted to be about normal. Settlement in this area of the embankment has apparently been stabilized. The riprap upstream and downstream face of the embankment in the general location of the spillway tube was noted to be okay.

The downstream face of the embankment was satisfactory. Though some brush was growing from the face of the embankment, this growth is rather thin. No toe seepage whatsoever was noted.

The old original spillway tubes are in the same general condition as previously reported. Inverts have become rotted. Water level in storage was at the invert elevation of the tube. The headwall is cracked at three locations and a portion of the headwall is misaligned. This condition does not endanger the dam. No leakage whatsoever was noted through the embankment in the vicinity of these spillway tubes.

In the opinion of the undersigned, the dam is safe. At some future date, funds should be included in the budget for maintenance of the reservation to provide for repairing or replacing the spillway tubes and repairing or replacing the cracked concrete headwall.

D. Whiting Street Reservoir Dam - Holyoke Water Works

The embankment of this dam was found to be in very good condition. There is no brush growth on the downstream face nor on the top of the embankment. The turf cover on the top and on the downstream face is very good. The toe of the embankment fill is damp but this is a normal condition at this dam. The upstream vertical stone wall was noted to be in good condition.

The concrete of the spillway is eroded and cracked. However, this condition does not endanger the dam and the erosion and cracking has not extended enough, as yet, to require immediate repairs. There was no debris in the spillway and the channels under the bridge abutments are becoming undermined, but the undermining has not extended to a point wherein the abutments are endangered. This condition will be watched in the future and a recommendation made for repairs when erosion has extended further into the foundation of the abutment walls.

There were no flashboards on the crest of the spillway and water level in storage was down about four feet more or less from crest elevation. The spillway discharge chute downstream of the bridge over the spillway was free and clear of any debris or brush growth.

In the opinion of the undersigned, this dam is safe.

E. Whiting Street Intake Dam - Holyoke Water Works

This dam has been abandoned as a result of Route 91 construction and the construction of the related access road from Route 91 to Mountain Park and to Whiting Street Reservoir Dam. The pond is empty and the bottom is becoming overgrown with grass and brush. The area is being filled with earth dumped from on top of the old stone masonry dam. The gatehouse has been removed completely.

A huge culvert has been built, as part of the highway construction program, through what was originally the left end of the dam and this culvert drains away all surface water that formerly was ponded by the dam.

No water will be ponded at this site again, and it is recommended that this dam be dropped from County records.

F. William Skinner Dams

Upper Dam The embankment of this dam was in good condition. It was well maintained and had a good turf cover. There was some toe seepage, noted at the right end but this seepage is normal for conditions at this dam. The small spillway notch was okay and was clear of any debris. Water level was overflowing the spillway. No flashboards were on the crest.

In the opinion of the undersigned, this dam is safe.

Lower Dam The embankment of this dam was noted to be in good condition. It is well shaped and well maintained. A good growth of turf covers the entire embankment. No toe seepage was noted whatsoever.

It was noted on the day of inspection, Monday, November 7, 1966, that water level in storage was at a higher elevation than ever before noted. Freeboard at the dam was very low. An examination of the spillway inlet structure showed no flow whatsoever into the spillway shaft and water flooded the shaft. It is apparent that the conduit leading from the bottom of the shaft or the shaft itself has been plugged, probably with debris. Should the pond rise another six inches because of storm water runoff conditions, it is possible that this dam would be overtopped.

The undersigned telephoned Mr. William Skinner, owner of the dam, and notified him of the condition. He stated that he was unaware of the condition but that he would investigate the matter immediately and agreed that he would probably find the spillway discharge tube plugged. There seems no need to take further action on this matter

since the owner is aware of the condition and has agreed to take corrective action.

G. McLean Reservoir Dam, Holyoke Water Works

The embankment of this dam was found to be in excellent condition. The road across the top of the embankment was okay and the turf on each side of the road as well as on the downstream face of the embankment was in very good condition. The downstream rock toe was found to be okay and no toe seepage whatsoever was noted.

The upstream rock-paved face was in good condition. The spillway structure was fair. The concrete-covered stone masonry forming this structure is becoming cracked and chipped. The cracking, for the most part, is only on the surfacing over the stone masonry; and consequently, this condition does not affect the safety of the structure. On the day of inspection, it was noted that water level was down about four feet from the crest of the spillway. This is the highest water elevation noted in the reservoir for some time. No flashboards were on the crest of the spillway. The concrete crest-wall itself was in very good condition. The spillway chute downstream of the crestwall was okay.

In the opinion of the undersigned, this dam is safe.

H. Bray Reservoir Dam, Holyoke Water Works

The embankment of this dam is becoming heavily overgrown with brush and small trees. This condition does not affect the safety of the dam because of the very large capacity of Ashley Reservoir located immediately downstream. Also, the spillway built at this dam, following the flood of August, 1955, is extremely large in capacity and is at an elevation much below the elevation of the top of the earth embankment. The spillway channel was found to be in satisfactory condition. Though it is covered with brush and small tree growth, the channel is extremely large in relation to the small drainage area and thus has adequate capacity even though it does become choked with brush or tree growth. Water level in storage at the time of inspection was down about four feet more or less below the crest of the new spillway.

In spite of the little maintenance work being done on the dam embankment as regards brush and small tree growth, in the opinion of the undersigned, this dam is safe. The embankment is massive for the small head of water and shallow pond formed.

I. Ashley Pond Dam, Holyoke Water Works

The embankment of this dam was found to be okay. It has been fairly well maintained. The stone toe wall was in good condition. The concrete masonry of the spillway was satisfactory but the stone masonry work was noted to be in only fair condition. There were no flashboards on the crest and water level in storage was down about four feet from crest elevation.

The auxiliary spillway to the right end of the embankment was in satisfactory condition. There were no flashboards in the slots of this spillway. The spillway pipes under the road were okay and were noted to be free and clear of any debris.

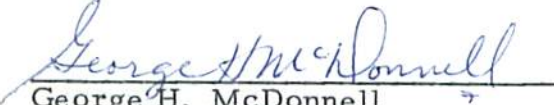
J. Zenner Dam (Now YMCA)

This small earth dam with a downstream stone masonry wall is in fair condition. The dam embankment is rough in shape and the downstream face of the stone wall is poorly aligned. However, the stone wall is functional. Very little seepage was noted through the wall. Water was discharging at a location near the toe of the wall on the left side of the spillway and at another location at the toe of the wall to the right of the spillway. However, the discharge was emerging from a small pipe at each of these two locations. Apparently, leakage is entering the pipeline through an upstream plug or entering the pipeline through openings in the pond. Since all water is being discharged from the pipelines proper and not from the embankment along the outside surface of the pipelines, the condition does not endanger the dam.

The small concrete spillway was noted to be okay. No flashboards were on the crest. Water was overflowing the spillway chute. Abutment areas were satisfactory.

This dam has been rebuilt and improved in the past two years. Because of the new work done on the embankment and on the dam in general, though the embankment is rough and the downstream wall is only fair, the dam is safe.

Respectfully submitted,


George H. McDonnell
County Hydraulic Engineer

GHM/app

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD Holyoke
December 8, 1969

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

The undersigned has completed the inspection of all dams situated within the City of Holyoke. Every dam has been inspected at least once during the year 1969. The following is a summary of conditions noted at each of the dams in the City of Holyoke.

A. Holyoke Water Power Co. Dam

This dam is in very good condition. It is always well maintained. During the past fall, the masonry of the dam was repaired and pointed as needed. Improvements and repairs were done at the toe of the dam and in the bed of the river.

The abutment area on each side of the river is in good condition. The canal headworks are o.k.

Normal flashboards have been maintained on the crest of the dam throughout the year except during those periods of time when river flow was heavy and the boards were washed away.

In the opinion of the undersigned, this dam extending across the Connecticut River between Holyoke and South Hadley is safe.

B. Schaeffer Dam

The embankment which forms this dam was found to be in good condition. It has a very good turf cover. The embankment is quite

wide in relation to its low height. As pointed out previously, the embankment could be overtopped by flood flows without endangering the dam or causing a serious breach in the embankment. The spillway inlet structure is satisfactory. Stoplogs were in place to the usual height and water was overflowing the upper stoplog. The spillway tube was o.k. and was clear of any debris. The discharge end of the tube was satisfactory.

The toe area of the embankment was relatively dry.

The dam is fairly well maintained. The area surrounding the pond and the dam is apparently no longer being used for recreational purposes as in the past.

In the opinion of the undersigned, the dam is safe.

C. Lake Bray Dam

This dam located on the Mt. Tom Reservation property is in need of attention.

The old spillway tubes are in very poor condition, they are deeply eroded and rotten. In fact, these tubes have failed and, if corrective action is not taken in the coming year, it is possible that they may collapse.

The sandbag and earth temporary dike placed in front of the tubes to prevent them from becoming active, has been broken through and the dike is no longer serviceable. This dike should be maintained, it should be inspected and repaired two or three times weekly if necessary in order to keep it functional and to prevent the entrance of lake water into the old spillway tubes.

The headwall is broken, it is failing and sections are leaning.

A depression has formed on the surface of the dam above the old dilapidated twin spillway tubes. The depression is quite evident at the edge of the road and is now extending under the roadway pavement. The depression will continue to widen and deepen as a result of water wash, and it can be expected that the road will settle to a point where the pavement will fail. Even at the present time, in driving over the area adjacent to the visible failure, a depression in the asphalt paving can be felt.

Action should be taken to prevent possible loss of the dam embankment during the coming spring high water season by definitely preventing the entrance of lake water into the spillway tube and by filling in the surface depression to prevent collection of surface water at this location.

The new spillway built after the flood of August, 1955 is satisfactory and was noted to be operating. No seepage was observed along the outside of the corrugated iron tube when inspected at the downstream edge of the embankment.

The road depression on the upstream side of the embankment directly over the major spillway should again be filled in this year by the addition of asphalt paving to the roadway.

The toe area of the embankment was relatively dry.

A previous report relative to this dam recommended that the temporary sandbag diversion facility in front of the old spillway tubes serve until only after the spring freshet of 1969. Permanent repairs are needed, and since they were not accomplished during the summer of this past year, they must definitely be considered and included in the maintenance work for 1970.

Please note my special letter-report of December 9, 1968, together with the routine annual report of October 23, 1968 in regard to the Bray Lake Dam.

D. Whiting Street Reservoir Dam - Holyoke Water Works

The spillway at this dam is in fair condition. The concrete is eroded but the spillway structure is relatively large in size and the erosion is not deep enough to endanger the spillway. No flashboards were on the crest and water level in storage was well below the permanent spillway crest elevation.

The road bridge directly below the spillway is in need of attention and repair at the side abutments. The abutments are undermined and there is also evidence of abutment wall movement. Repairs should be made to protect the bridge, to prevent any further movement of the abutments and to maintain the spillway discharge channel in a suitable condition.

The long embankment forming the dam is o.k. It is well maintained on top. However, small oak trees growing from the sloping face of the embankment, as well as all brush growth, should be cut down.

The toe area of the dam was o.k. It is damp in certain areas but this is a normal condition. The toe drain was noted to be operating and discharging a trickle of water.

In the opinion of the undersigned, this dam is safe but it does need attention and maintenance as outlined hereinbefore.

E. William Skinner Dams

Upper Dam The embankment forming this dam was noted to be o.k. It has a fair turf cover. There were some field stones forming a portion of the surface area.

Seepage noted in the past at the right toe is still about the same and occurs in the general area of the discharge end of the drawdown pipe. Most of the seepage is apparently the result of leakage from the drawdown pipe.

In general, the entire toe area of the dam embankment was noted to be satisfactory.

The spillway notch was normal. No flashboards or stoplogs were on the crest and water level was at the stone spillway crest elevation. No debris was on the spillway.

The rock and ledge waterfall discharge section of the spillway was noted to be o.k.

In the opinion of the undersigned, this dam is safe.

Lower Dam This embankment is in fair condition and it has a fair turf cover. It is quite wide for its low height. Trees grow from the embankment but because of its width, the trees do not endanger the dam.

There was a screen in the spillway entrance notch that was partially clogged with leaves. However, the screen is very low in height and any increase in water level will overflow the screen.

The spillway shaft and entry structure was o.k. The shaft was not flooded out as noted in previous years.

In the opinion of the undersigned, this dam was satisfactory and was safe.

F. McLean Reservoir Dam - Holyoke Water Works

The embankment forming this dam was satisfactory as to shape and general condition. Brush growth occurring on the water side slope along the top of the stone paving should all be cut down. The stone surfacing on the water side was o.k.

Miscellaneous brush growth which occurs on the downstream slope should also be cut down as necessary.

Spalling and eroding masonry of the spillway should be repaired. All cracks, voids and eroded areas should be cleaned out and patched with proper patching concrete.

There were no flashboards on the crest of the spillway. Water level in the reservoir was well below spillway crest.

Toe seepage emerging from the stone fill toe at the embankment appeared to be somewhat greater in quantity than in the past years. The condition should be watched periodically and the cause of any further increase should be investigated.

The road extending along the top of the dam was satisfactory as to grade. There was no evidence of settlement or cracking.

In the opinion of the undersigned, the dam is safe. However, it is in need of maintenance as outlined hereinbefore.

G. Bray Reservoir Dam - Holyoke Water Works

The embankment forming this dam is completely overgrown with trees and portions are covered with brush. The condition is not dangerous because the embankment is quite wide for its height and the freeboard above maximum water level is very high.

The riprap lined spillway swale to the right of the dam embankment was found to be satisfactory. Water level in storage was slightly below the elevation of the swale floor.

The spillway swale is becoming filled with small tree and brush growth. As of the present time, the density and size of this growth would not prevent flood flows from passing thru the swale. However, in the not

too distant future, some of this growth may become big enough where it will be necessary to be cut and removed.

In the opinion of the undersigned, this small reservoir dam is safe.

H. Ashley Pond Dam - Holyoke Water Works

The small embankment at this dam was o.k. Trees are becoming fairly large but they do not endanger the dam at present. The downstream toe wass was noted to be satisfactory. No seepage was observed. Water level in storage was well below spillway crest elevation.

This principal spillway was found to be o.k. No flashboards were on the crest. Stone and concrete masonry was observed to be in fair condition.

The emergency side spillway masonry was noted to be in fair condition. Pipes under the road were o.k.

Very little brush was noted on the embankment.

In the opinion of the undersigned, this dam is safe.

I. Zenner Dam (now YMCA)

This dam has been improved and was noted to be in good condition. The old stone masonry portion of the dam has been concreted and topped with concrete pavement. Earth backing on the pond side is rough as to shape and surface but it is o.k.

The spillway approach channel to the new concrete wall construction is in poor condition in that side walls are breaking up. However, since they are upstream of the new concrete wall construction the condition does not endanger the dam.

Water level in storage was at spillway crest elevation on the day of inspection and no stoplogs were in the slots.

The toe area of the dam was reasonably dry and satisfactory.

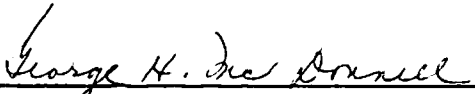
The new concrete wall forming the main part of the dam is a big improvement.

TIGHE
& BOND *CONSULTING ENGINEERS*

-7-

In the opinion of the undersigned, this dam is safe.

Respectfully submitted,



George H. McDonnell
Chief Engineer

GHM/amd



End of Book D25-2 ~ Dams ~ Hampden County